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FILE COVERS 1907 - 13 Feb 2006 VOL 144 ISS 8

FILE LAST UPDATED: 12 Feb 2006 (20060212/ED)

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=> e us-2004259023/pn

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E2	1	US2004259021/PN
E3	1 -->	US2004259023/PN
E4	1	US2004259024/PN
E5	1	US2004259025/PN
E6	1	US2004259026/PN
E7	2	US2004259027/PN
E8	1	US2004259028/PN
E9	1	US2004259029/PN
E10	1	US2004259030/PN
E11	1	US2004259031/PN
E12	1	US2004259032/PN

=> s e3;d all

L1 1 US2004259023/PN

L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:1126939 CAPLUS

DN 142:74350

ED Entered STN: 24 Dec 2004

TI Preparation of benzophenone derivative crosslinking photoactivators

IN Campagnola, Paul J.; Howell, Amy R.; Wang, Jun; Goodman, Steven L.

PA USA

SO U.S. Pat. Appl. Publ., 12 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM G03C001-76

INCL 430270100

CC 25-16 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)

Section cross-reference(s): 35, 63

FAN.CNT 1

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Search  
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for 10/705, 254  
2/17/06

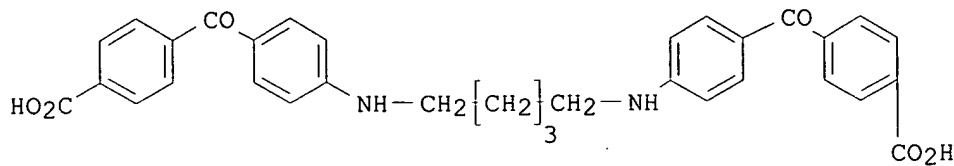
G. Hamble

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004259023	A1	20041223	US 2003-705254	20031110 <--
PRAI	US 2002-425220P	P	20021108		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004259023	ICM	G03C001-76
	INCL	430270100
	IPCI	G03C0001-76 [ICM,7]
	IPCR	G03F0007-038 [I,A]; G03F0007-038 [I,C]; G03F0007-20 [I,A]; G03F0007-20 [I,C]
	NCL	430/270.100
	ECLA	A61K006/083B; G03F007/038; G03F007/20S2

OS MARPAT 142:74350  
GI



I

AB A method for crosslinking one or more mols. comprises crosslinking the one or more mols. with a photactivatable crosslinker by one-photon or multi-photon excitation, wherein the crosslinker comprises at least two photoactive groups linked by a bridging moiety, and further wherein the point volume of the activation has at least one dimension of less than about 1  $\mu$ . The method is of particular utility for water-soluble mols., particularly biol. active water-soluble mols. for possible use in tissue engineering. An example crosslinker (I) was prepared

ST benzophenone deriv prepn crosslinker photoactivator

IT Crosslinking agents  
(photochem.; preparation of benzophenone derivative crosslinking photoactivators)

IT 789485-39-8P  
RL: NUU (Other use, unclassified); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
(preparation of benzophenone derivative crosslinking photoactivators)

IT 106-38-7, 4-Bromotoluene 462-94-2, 1,5-Pentanediamine 1122-91-4, 4-Bromobenzaldehyde  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of benzophenone derivative crosslinking photoactivators)

IT 29334-17-6P, 4-Bromophenyl(4-methylphenyl)methanol 51310-29-3P 51310-30-6P 76693-57-7P, 4-Bromo-4'-methylbenzophenone 478678-66-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of benzophenone derivative crosslinking photoactivators)

# => FIL REGISTRY

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	5.48	5.69
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-0.75	-0.75

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STRUCTURE FILE UPDATES: 12 FEB 2006 HIGHEST RN 874108-28-8  
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* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
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=> S 789485-39-8/RN

L2 1 789485-39-8/RN

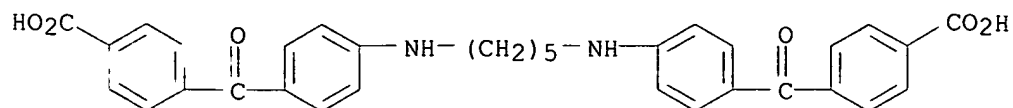
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DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:y

L2 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 789485-39-8 REGISTRY  
CN Benzoic acid, 4,4'-[1,5-pentanediy]bis(imino-4,1-phenylenecarbonyl)]bis-  
(9CI) (CA INDEX NAME)  
FS 3D CONCORD  
MF C33 H30 N2 O6  
CI COM  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL  
DT.CA CAplus document type: Journal; Patent  
RL.P Roles from patents: PREP (Preparation); PRP (Properties); USES (Uses)  
RLD.NP Roles for non-specific derivatives from non-patents: BIOL (Biological  
study); PREP (Preparation); PRP (Properties); RACT (Reactant or  
reagent); USES (Uses)



2 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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 SET COMMAND COMPLETED

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=> s 12

L3 1 789485-39-8/RN

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.34	8.03
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-0.75

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 FILE LAST UPDATED: 12 Feb 2006 (20060212/ED)

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=> s 12

L4 2 L2

=> d all 1-2

L4 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2005:257433 CAPLUS  
 DN 142:469100  
 ED Entered STN: 25 Mar 2005  
 TI Multiphoton excited fabrication of collagen matrixes crosslinked by a modified benzophenone dimer: bioactivity and enzymatic degradation  
 AU Basu, Swarna; Cunningham, Lawrence P.; Pins, George D.; Bush, Katie A.; Taboada, Rosa; Howell, Amy R.; Wang, Jun; Campagnola, Paul J.  
 CS Department of Cell Biology and Center for Cellular Analysis and Modeling,

SO University of Connecticut Health Center, Farmington, CT, 06030, USA  
 Biomacromolecules (2005), 6(3), 1465-1474  
 CODEN: BOMAF6; ISSN: 1525-7797  
 PB American Chemical Society  
 DT Journal  
 LA English  
 CC 63-7 (Pharmaceuticals)  
 AB Multiphoton excited (MPE) photochem. is used to fabricate model tissue engineering scaffolds directly from types I, II, and IV collagen. A modified benzophenone dimer (BPD) provided the photoactivation and becomes incorporated into the resulting collagen matrixes. Unlike xanthene photochemistries, the benzophenone dimer can be used in acidic environments, where most forms of collagen have the greatest solubility. The min. feature sizes are investigated by using two- and three-photon excitation, where the latter provides for superior "resolution" and suggests that collagen structures can be fabricated on the size scales of focal contacts. The resulting structures displayed excellent retention of bioactivity as evidenced by highly specific cell adhesion as well as immunofluorescence labeling. Structural and chemical aspects of the collagen matrixes were probed through measuring the enzymic degradation through specific and nonspecific proteases, as the resulting relative rates were consistent with the activity of these enzymes. The degradation rates can also be controlled through varying the crosslink d. in the matrixes, which is achieved through tuning the exposure dose during the fabrication process. The degradation rates were also found to be consistent with swelling/shrinking measurements and thus the average mesh size of the matrixes. In all cases the enzymic degrades. were well-fit single exponentials, suggesting that the matrixes can be fabricated with a priori knowledge of their structural properties. These results coupled with the resulting bioactivity suggested that the multiphoton fabrication process may be a powerful tool for the creation of cell-sized tissue engineering scaffolds.

ST multiphoton excitation collagen crosslinked benzophenone dimer tissue engineering scaffold  
 IT Adhesion, biological  
 Surface structure  
 Swelling, physical  
 (bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT Animal tissue  
 (engineering; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT Decomposition  
 (enzymic; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT Prosthetic materials and Prosthetics  
 (implants, scaffolds for tissue engineering; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin)

IT Photoexcitation  
 (multiphoton; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT Albumins, biological studies  
 RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (serum, bovine, crosslinked with benzophenone dimers and collagens; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer as tissue engineering scaffolds)

IT Collagens, biological studies  
 RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (type I, crosslinked with benzophenone dimers and bovine serum albumins; bioactivity and enzymic degradation of multiphoton excited

fabrication of collagen matrixes crosslinked by modified benzophenone dimer as tissue engineering scaffolds)

IT Collagens, biological studies  
 RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (type II, crosslinked with benzophenone dimers and bovine serum albumins; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer as tissue engineering scaffolds)

IT Collagens, biological studies  
 RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (type IV, crosslinked with benzophenone dimers and bovine serum albumins; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer as tissue engineering scaffolds)

IT 9001-12-1, Collagenase 9001-75-6, Pepsin 9002-07-7, Trypsin  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT **789485-39-8DP**, crosslinked with collagens and bovine serum albumins  
 RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT **789485-39-8D**, derivs.  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT 112-04-9, Octadecyltrichlorosilane  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (monolayer substrate; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

RE.CNT 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L4 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:1126939 CAPLUS  
 DN 142:74350  
 ED Entered STN: 24 Dec 2004  
 TI Preparation of benzophenone derivative crosslinking photoactivators  
 IN Campagnola, Paul J.; Howell, Amy R.; Wang, Jun; Goodman, Steven L.  
 PA USA  
 SO U.S. Pat. Appl. Publ., 12 pp.  
 CODEN: USXXCO

DT Patent  
 LA English  
 IC ICM G03C001-76  
 INCL 430270100  
 CC 25-16 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)  
 Section cross-reference(s): 35, 63

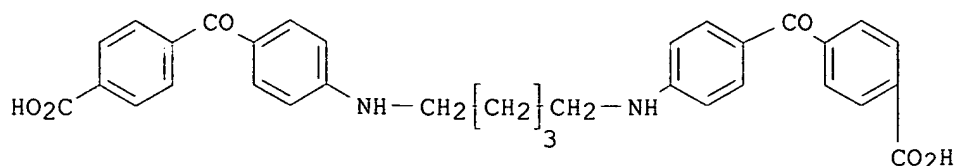
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	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004259023	A1	20041223	US 2003-705254	20031110
PRAI	US 2002-425220P	P	20021108		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004259023	ICM	G03C001-76
	INCL	430270100
	IPCI	G03C0001-76 [ICM,7]
	IPCR	G03F0007-038 [I,A]; G03F0007-038 [I,C]; G03F0007-20 [I,A]; G03F0007-20 [I,C]
	NCL	430/270.100
	ECLA	A61K006/083B; G03F007/038; G03F007/20S2

OS MARPAT 142:74350  
 GI



I

AB A method for crosslinking one or more mols. comprises crosslinking the one or more mols. with a photactivatable crosslinker by one-photon or multi-photon excitation, wherein the crosslinker comprises at least two photoactive groups linked by a bridging moiety, and further wherein the point volume of the activation has at least one dimension of less than about 1  $\mu$ . The method is of particular utility for water-soluble mols., particularly biol. active water-soluble mols. for possible use in tissue engineering. An example crosslinker (I) was prepared

ST benzophenone deriv prepn crosslinker photoactivator

IT Crosslinking agents  
(photochem.; preparation of benzophenone derivative crosslinking photoactivators)

IT **789485-39-8P**  
RL: NUU (Other use, unclassified); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
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IT 106-38-7, 4-Bromotoluene 462-94-2, 1,5-Pentanediamine 1122-91-4, 4-Bromobenzaldehyde  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of benzophenone derivative crosslinking photoactivators)

IT 29334-17-6P, 4-Bromophenyl(4-methylphenyl)methanol 51310-29-3P 51310-30-6P 76693-57-7P, 4-Bromo-4'-methylbenzophenone 478678-66-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of benzophenone derivative crosslinking photoactivators)

=> FIL STNGUIDE

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	7.06	15.09
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
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	ENTRY	SESSION
FULL ESTIMATED COST	0.48	15.57
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	0.00	-2.25

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* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005. A new display format, IDERL, is now     *
* available and contains the CA role and document type information. *
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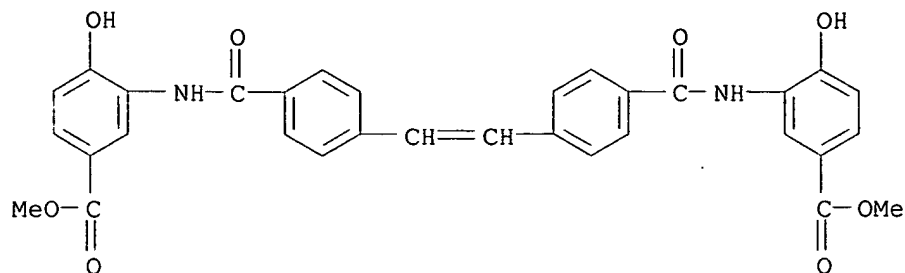
=> bis and benzoic acid  
BIS IS NOT A RECOGNIZED COMMAND  
The previous command name entered was not recognized by the system.  
For a list of commands available to you in the current file, enter "HELP COMMANDS" at an arrow prompt (=>).

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      762228 BENZOIC
      7479182 ACID
      760964 BENZOIC ACID
          (BENZOIC(W)ACID)
L5      62237 BIS AND BENZOIC ACID
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L6      268 L5 AND PHENYLENECARBONYL
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=> d 268

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L6  ANSWER 268 OF 268  REGISTRY  COPYRIGHT 2006 ACS on STN
RN  4763-86-4  REGISTRY
ED  Entered STN:  16 Nov 1984
CN  Benzoic acid, 3,3'-[vinylenebis(p-phenylenecarbonylimino)]bis[4-
hydroxy-, dimethyl ester (7CI, 8CI) (CA INDEX NAME)
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MF  C32 H26 N2 O8
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      (*File contains numerically searchable property data)
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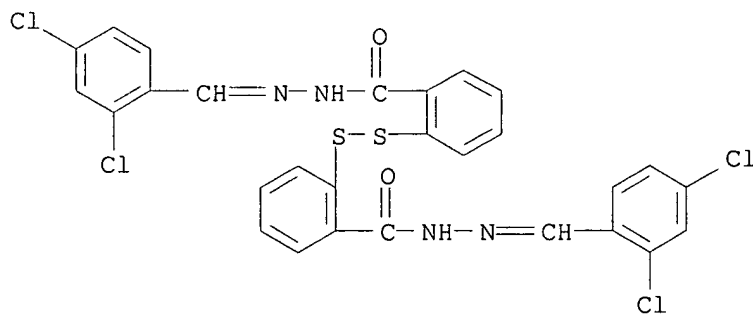
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3 REFERENCES IN FILE CA (1907 TO DATE)  
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 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

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=> d 267

L6 ANSWER 267 OF 268 REGISTRY COPYRIGHT 2006 ACS on STN  
 RN 5398-51-6 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Benzoic acid, 2,2'-dithiobis-, bis[[2,4-dichlorophenyl)methylene]hydrazide] (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Benzoic acid, 2,2'-dithiodi-, bis[2,4-dichlorobenzylidenehydrazide] (6CI)  
 CN Hydrazine, 1,1'-[dithiobis(o-phenylenecarbonyl)]bis[2-[2,4-dichlorobenzylidene]- (6CI)  
 OTHER NAMES:  
 CN NSC 4493  
 FS 3D CONCORD  
 MF C28 H18 Cl4 N4 O2 S2  
 LC STN Files: ADISINSIGHT, BEILSTEIN\*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, TOXCENTER  
 (\*File contains numerically searchable property data)



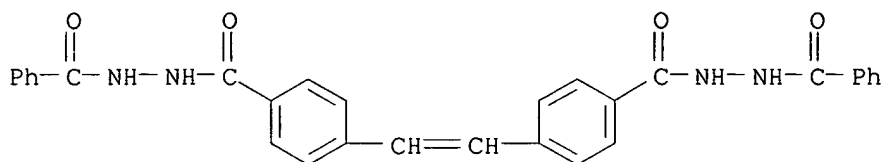
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

12 REFERENCES IN FILE CA (1907 TO DATE)  
 12 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> d 266

L6 ANSWER 266 OF 268 REGISTRY COPYRIGHT 2006 ACS on STN

RN 6394-08-7 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN **Benzoic acid, 4,4'-(1,2-ethenediyl)bis-, bis(2-benzoylhydrazide)**  
 (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN **Hydrazine, 1,1'-[vinylenebis(p-phenylenecarbonyl)]bis[2-benzoyl-**  
 (7CI, 8CI)  
 OTHER NAMES:  
 CN Stilbene-4,4'-dicarboxylic acid N-benzoyldihydrazide  
 FS 3D CONCORD  
 MF C30 H24 N4 O4  
 LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS  
 (\*File contains numerically searchable property data)



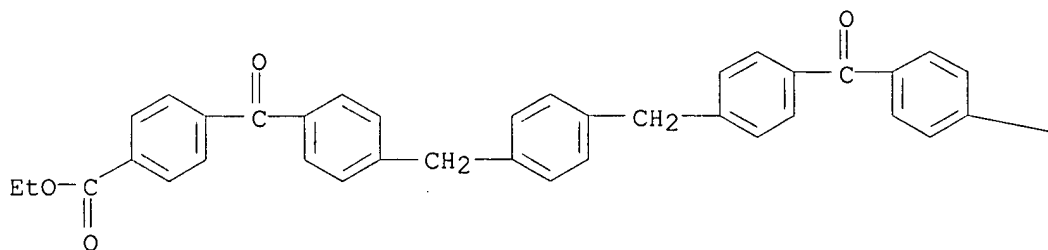
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
 2 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

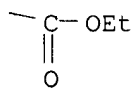
=> d 260-265

L6 ANSWER 260 OF 268 REGISTRY COPYRIGHT 2006 ACS on STN  
 RN 18908-95-7 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN **Benzoic acid, 4,4'-[p-phenylenebis(methylene-p-phenylenecarbonyl)]di-**  
**, diethyl ester (8CI)** (CA INDEX NAME)  
 FS 3D CONCORD  
 MF C40 H34 O6  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS  
 (\*File contains numerically searchable property data)

PAGE 1-A



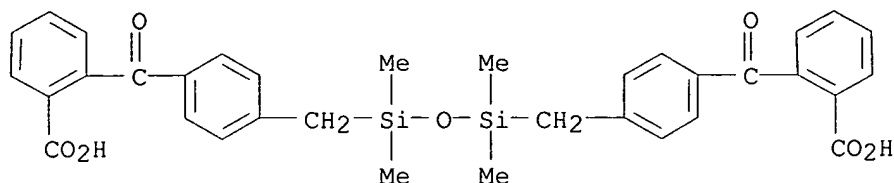
PAGE 1-B



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L6 ANSWER 261 OF 268 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 18876-51-2 REGISTRY  
ED Entered STN: 16 Nov 1984  
CN **Benzoic acid, 2,2'-[(tetramethyldisiloxanylene)bis(methylene-p-phenylenecarbonyl)]di-** (6CI, 8CI) (CA INDEX NAME)  
FS 3D CONCORD  
MF C34 H34 O7 Si2  
LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS  
(\*File contains numerically searchable property data)



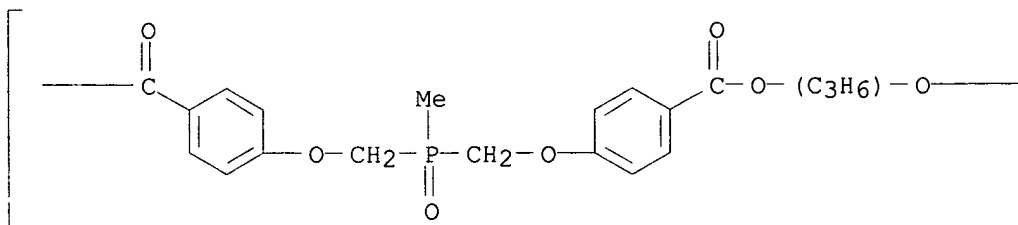
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L6 ANSWER 262 OF 268 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 9054-17-5 REGISTRY  
ED Entered STN: 16 Nov 1984  
CN **Poly[oxy(methyl-1,2-ethanediyl)oxycarbonyl-1,4-phenyleneoxymethylene(methylphosphinyldiene)methyleneoxy-1,4-phenylenecarbonyl]** (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN **4,4'-[(Methylphosphinyldiene)bis(methyleneoxy)]dibenzoic acid-propylene glycol polymer, SRU**  
CN **Dimethyl 4,4'-[(methylphosphinyldiene)bis(methyleneoxy)]dibenzoate-1,2-propanediol polymer, SRU**  
MF (C20 H21 O7 P)<sub>n</sub>  
CI IDS, PMS  
PCT Polyester, Polyether  
LC STN Files: CA, CAPLUS

\*\*RELATED POLYMERS AVAILABLE WITH POLYLINK\*\*

PAGE 1-A



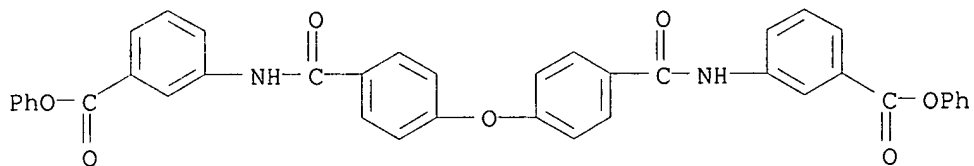
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2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L6 ANSWER 263 OF 268 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 7450-74-0 REGISTRY  
ED Entered STN: 16 Nov 1984  
CN **Benzoic acid, 3,3'-[oxybis(p-phenylenecarbonylimino)]di-, diphenyl ester (7CI, 8CI)** (CA INDEX NAME)

## OTHER NAMES:

CN **4,4'-Bis[N-(3-phenoxybenzoyl)carbamoyl]diphenyl ether**  
FS 3D CONCORD  
MF C40 H28 N2 O7  
CI COM  
LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, IFICDB, IFIPAT, IFIUDB  
(\*File contains numerically searchable property data)



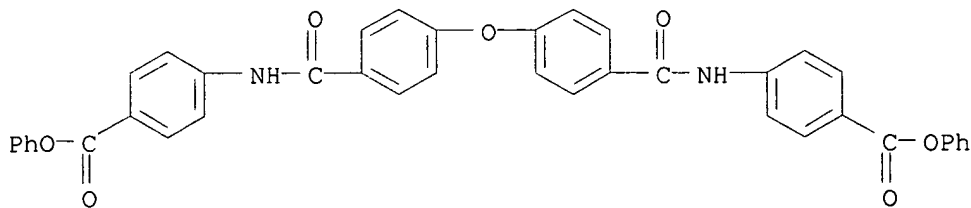
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

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2 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L6 ANSWER 264 OF 268 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 7450-73-9 REGISTRY  
ED Entered STN: 16 Nov 1984  
CN **Benzoic acid, 4,4'-[oxybis(p-phenylenecarbonylimino)]di-, diphenyl ester (7CI, 8CI)** (CA INDEX NAME)

## OTHER NAMES:

CN **4,4'-Bis[N-(4-phenoxybenzoyl)carbamoyl]diphenyl ether**  
FS 3D CONCORD  
MF C40 H28 N2 O7  
CI COM  
LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, IFICDB, IFIPAT, IFIUDB  
(\*File contains numerically searchable property data)

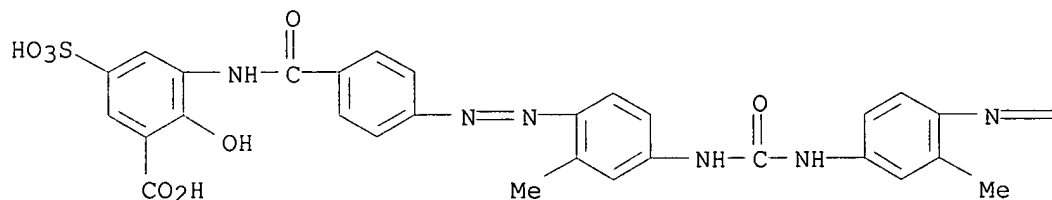


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

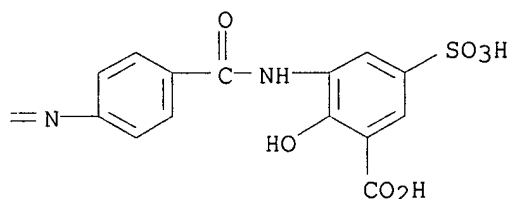
L6 ANSWER 265 OF 268 REGISTRY COPYRIGHT 2006 ACS on STN  
RN 6420-28-6 REGISTRY  
ED Entered STN: 16 Nov 1984  
CN **Benzoic acid, 3,3'-[carbonylbis[imino(2-methyl-4,1-phenylene)azo-4,1-phenylenecarbonylimino]]bis[2-hydroxy-5-sulfo-, tetrasodium salt (9CI)**  
(CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN C.I. Direct Yellow 33, tetrasodium salt (8CI)  
OTHER NAMES:  
CN Benzo Cuprol Yellow GRL  
CN Benzo Fast Copper Yellow GRL  
CN C.I. 29020  
CN C.I. Direct Yellow 33  
CN Direct Yellow 33  
CN Sirius Supra Yellow FRRL  
DR 60033-73-0  
MF C43 H34 N8 O15 S2 . 4 Na  
LC STN Files: CA, CAPLUS, CHEMLIST, SPECINFO, TOXCENTER  
Other Sources: EINECS\*\*, NDSL\*\*, TSCA\*\*  
(\*\*Enter CHEMLIST File for up-to-date regulatory information)  
CRN (745717-52-6)

PAGE 1-A



● 4 Na

PAGE 1-B



14 REFERENCES IN FILE CA (1907 TO DATE)  
14 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> FIL REGISTRY

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

37.90

53.47

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-2.25

FILE 'REGISTRY' ENTERED AT 16:57:49 ON 13 FEB 2006  
 USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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Property values tagged with IC are from the ZIC/VINITI data file  
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STRUCTURE FILE UPDATES: 12 FEB 2006 HIGHEST RN 874108-28-8  
 DICTIONARY FILE UPDATES: 12 FEB 2006 HIGHEST RN 874108-28-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when  
 conducting SmartSELECT searches.

```

*****
*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*
*****
  
```

Structure search iteration limits have been increased. See HELP SLIMITS  
 for details.

REGISTRY includes numerically searchable data for experimental and  
 predicted properties as well as tags indicating availability of  
 experimental property data in the original document. For information  
 on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> S 18908-95-7/RN

L7 1 18908-95-7/RN

=> SET NOTICE 1 DISPLAY

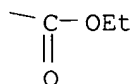
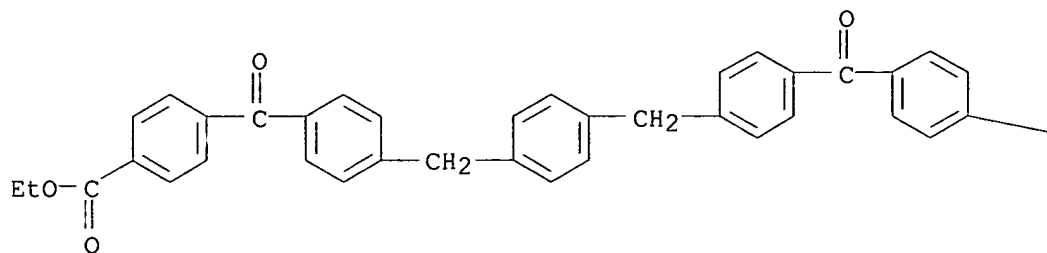
NOTICE SET TO 1 U.S. DOLLAR FOR DISPLAY COMMAND  
 SET COMMAND COMPLETED

=> D L7 SQIDE 1-

YOU HAVE REQUESTED DATA FROM 1 ANSWERS - CONTINUE? Y/(N):y  
 THE ESTIMATED COST FOR THIS REQUEST IS 6.36 U.S. DOLLARS  
 DO YOU WANT TO CONTINUE WITH THIS REQUEST? (Y)/N:y

```

L7 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN
RN 18908-95-7 REGISTRY
CN Benzoic acid, 4,4'-[p-phenylenebis(methylene-p-phenylenecarbonyl)]di-,
   diethyl ester (8CI) (CA INDEX NAME)
FS 3D CONCORD
MF C40 H34 O6
LC STN Files: BEILSTEIN*, CA, CAPLUS
   (*File contains numerically searchable property data)
DT.CA Caplus document type: Journal
RL.NP Roles from non-patents: PREP (Preparation)
  
```



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> SET NOTICE LOGIN DISPLAY

NOTICE SET TO OFF FOR DISPLAY COMMAND  
SET COMMAND COMPLETED

=>

=> file caplus

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	2.34	55.81
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-2.25

FILE 'CAPLUS' ENTERED AT 16:58:00 ON 13 FEB 2006  
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FILE COVERS 1907 - 13 Feb 2006 VOL 144 ISS 8  
FILE LAST UPDATED: 12 Feb 2006 (20060212/ED)

Effective October 17, 2005, revised CAS Information Use Policies apply.



They are available for your review at:

<http://www.cas.org/infopolicy.html>

=> d his

(FILE 'HOME' ENTERED AT 16:48:31 ON 13 FEB 2006)

FILE 'CAPLUS' ENTERED AT 16:48:36 ON 13 FEB 2006

E US-2004259023/PN

L1 1 S E3

FILE 'REGISTRY' ENTERED AT 16:49:18 ON 13 FEB 2006

L2 1 S 789485-39-8/RN

SET NOTICE 1 DISPLAY

SET NOTICE LOGIN DISPLAY

L3 1 S L2

FILE 'CAPLUS' ENTERED AT 16:49:44 ON 13 FEB 2006

L4 2 S L2

FILE 'STNGUIDE' ENTERED AT 16:50:44 ON 13 FEB 2006

FILE 'REGISTRY' ENTERED AT 16:55:32 ON 13 FEB 2006

L5 62237 S BIS AND BENZOIC ACID

L6 268 S L5 AND PHENYLENECARBONYL

FILE 'REGISTRY' ENTERED AT 16:57:49 ON 13 FEB 2006

L7 1 S 18908-95-7/RN

SET NOTICE 1 DISPLAY

SET NOTICE LOGIN DISPLAY

FILE 'CAPLUS' ENTERED AT 16:58:00 ON 13 FEB 2006

=> s 17

L8 1 L7

=> d all

L8 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1968:402597 CAPLUS

DN 69:2597

ED Entered STN: 12 May 1984

TI Macro rings. I. Syntheses of a novel class of compounds with a chain of alternating benzene rings and methylene groups

AU Inazu, Takahiko; Yoshino, Tamotsu

CS Kyushu Univ., Fukuoka, Japan

SO Bulletin of the Chemical Society of Japan (1968), 41(3), 647-52

CODEN: BCSJA8; ISSN: 0009-2673

DT Journal

LA English

CC 25 (Noncondensed Aromatic Compounds)

GI For diagram(s), see printed CA Issue.

AB As starting materials for the synthesis of a macrocyclic compound (I), bridged diphenylmethane derivs. of the general formula p-XC6H4CH2(C6H4CH2)mC6H4X-p were synthesized (X = H or (CH2)nCO2R (n = 0-3), m = 2 or 3, and R = H or alkyl).

ST macrocycles diphenylmethanes; diphenylmethanes macrocycles

IT 782-92-3P 810-47-9P 18908-74-2P 18908-75-3P 18908-76-4P

18908-77-5P 18908-78-6P 18908-79-7P 18908-80-0P 18908-81-1P

18908-82-2P 18908-83-3P 18908-84-4P 18908-85-5P 18908-86-6P

18908-87-7P 18908-88-8P 18908-90-2P 18908-91-3P 18908-92-4P

18908-93-5P 18908-94-6P **18908-95-7P** 18908-96-8P

18908-97-9P 18908-99-1P 18909-00-7P 18909-01-8P 18909-02-9P

18915-92-9P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

=> d his

(FILE 'HOME' ENTERED AT 16:48:31 ON 13 FEB 2006)

FILE 'CAPLUS' ENTERED AT 16:48:36 ON 13 FEB 2006  
E US-2004259023/PN

L1 1 S E3

FILE 'REGISTRY' ENTERED AT 16:49:18 ON 13 FEB 2006

L2 1 S 789485-39-8/RN

SET NOTICE 1 DISPLAY

SET NOTICE LOGIN DISPLAY

L3 1 S L2

FILE 'CAPLUS' ENTERED AT 16:49:44 ON 13 FEB 2006

L4 2 S L2

FILE 'STNGUIDE' ENTERED AT 16:50:44 ON 13 FEB 2006

FILE 'REGISTRY' ENTERED AT 16:55:32 ON 13 FEB 2006

L5 62237 S BIS AND BENZOIC ACID

L6 268 S L5 AND PHENYLENECARBONYL

FILE 'REGISTRY' ENTERED AT 16:57:49 ON 13 FEB 2006

L7 1 S 18908-95-7/RN

SET NOTICE 1 DISPLAY

SET NOTICE LOGIN DISPLAY

FILE 'CAPLUS' ENTERED AT 16:58:00 ON 13 FEB 2006

L8 1 S L7

=> s 16 and photo?

866 L6

1383233 PHOTO?

L9 72 L6 AND PHOTO?

=> d 7s

'7S' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS ----- GI and AB

ALL ----- BIB, AB, IND, RE

APPS ----- AI, PRAI

BIB ----- AN, plus Bibliographic Data and PI table (default)

CAN ----- List of CA abstract numbers without answer numbers

CBIB ----- AN, plus Compressed Bibliographic Data

CLASS ----- IPC, NCL, ECLA, FTERM

DALL ----- ALL, delimited (end of each field identified)

DMAX ----- MAX, delimited for post-processing

FAM ----- AN, PI and PRAI in table, plus Patent Family data

FBIB ----- AN, BIB, plus Patent FAM

IND ----- Indexing data

IPC ----- International Patent Classifications

MAX ----- ALL, plus Patent FAM, RE

PATS ----- PI, SO

SAM ----- CC, SX, TI, ST, IT

SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;  
SCAN must be entered on the same line as the DISPLAY,  
e.g., D SCAN or DISPLAY SCAN)

STD ----- BIB, CLASS

IABS ----- ABS, indented with text labels

IALL ----- ALL, indented with text labels

IBIB ----- BIB, indented with text labels

IMAX ----- MAX, indented with text labels

ISTD ----- STD, indented with text labels

OBIB ----- AN, plus Bibliographic Data (original)

OIBIB ----- OBIB, indented with text labels

SBIB ----- BIB, no citations

SIBIB ----- IBIB, no citations

HIT ----- Fields containing hit terms

HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)  
containing hit terms

HITRN ----- HIT RN and its text modification

HITSTR ----- HIT RN, its text modification, its CA index name, and  
its structure diagram

HITSEQ ----- HIT RN, its text modification, its CA index name, its  
structure diagram, plus NTE and SEQ fields

FHITSTR ----- First HIT RN, its text modification, its CA index name, and  
its structure diagram

FHITSEQ ----- First HIT RN, its text modification, its CA index name, its  
structure diagram, plus NTE and SEQ fields

KWIC ----- Hit term plus 20 words on either side

OCC ----- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field codes. For a list of the display field codes, enter HELP DFIELDS at an arrow prompt (=>). Examples of formats include: TI; TI,AU; BIB,ST; TI,IND; TI,SO. You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR, FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC to view a specified Accession Number.

ENTER DISPLAY FORMAT (BIB):end

=> d his

(FILE 'HOME' ENTERED AT 16:48:31 ON 13 FEB 2006)

FILE 'CAPLUS' ENTERED AT 16:48:36 ON 13 FEB 2006  
E US-2004259023/PN

L1 1 S E3

FILE 'REGISTRY' ENTERED AT 16:49:18 ON 13 FEB 2006

L2 1 S 789485-39-8/RN  
SET NOTICE 1 DISPLAY  
SET NOTICE LOGIN DISPLAY

L3 1 S L2

FILE 'CAPLUS' ENTERED AT 16:49:44 ON 13 FEB 2006

L4 2 S L2

FILE 'STNGUIDE' ENTERED AT 16:50:44 ON 13 FEB 2006

FILE 'REGISTRY' ENTERED AT 16:55:32 ON 13 FEB 2006

L5 62237 S BIS AND BENZOIC ACID  
L6 268 S L5 AND PHENYLENECARBONYL

FILE 'REGISTRY' ENTERED AT 16:57:49 ON 13 FEB 2006

L7 1 S 18908-95-7/RN  
SET NOTICE 1 DISPLAY  
SET NOTICE LOGIN DISPLAY

FILE 'CAPLUS' ENTERED AT 16:58:00 ON 13 FEB 2006

L8 1 S L7  
L9 72 S L6 AND PHOTO?

=> d all 1-72

L9 ANSWER 1 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:1331658 CAPLUS  
DN 144:77955

ED Entered STN: 22 Dec 2005  
 TI Positive-working **photosensitive** resin composition  
 IN Imahashi, Satoshi; Satomi, Hiroshi; Wakui, Hiroyuki  
 PA Toyobo Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 15 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03F007-004  
 ICS G03F007-037; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 35, 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005351988	A2	20051222	JP 2004-170432	20040608
PRAI	JP 2004-170432		20040608		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005351988	ICM	G03F007-004
	ICS	G03F007-037; H01L021-027
	IPCI	G03F0007-004 [ICM,7]; G03F0007-037 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA01; 2H025/AA04; 2H025/AA10; 2H025/AB16; 2H025/AC01; 2H025/AD03; 2H025/BE04; 2H025/CB25; 2H025/CB26; 2H025/CB43; 2H025/CB45; 2H025/FA17; 2H025/FA29

AB Disclosed is a pos.-working **photosensitive** resin composition comprising (a) a resin precursor selected from polyimide precursors and polybenzoxazole precursors, (b) an acid derivative formed by o-nitroarylmethyl-esterifying cholic acid, deoxycholic acid, or lithocholic acid. The composition is used for a semiconductor protective film and an interlayer insulating film.

ST pos working **photosensitive** resin compn polyimide resin precursor

IT Electric insulators

**Photoimaging materials**

(Pos.-working **photosensitive** resin composition)

IT Polyimides, uses

RL: NUU (Other use, unclassified); USES (Uses)

(Pos.-working **photosensitive** resin composition)

IT Polyethers, preparation

RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP (Preparation); USES (Uses)

(polyamic acid-, fluorine-containing; Pos.-working **photosensitive** resin composition)

IT Fluoropolymers, preparation

RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP (Preparation); USES (Uses)

(polyamic acid-polyether-; Pos.-working **photosensitive** resin composition)

IT Polyethers, preparation

RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP (Preparation); USES (Uses)

(polyamide-, fluorine-containing; Pos.-working **photosensitive** resin composition)

IT Fluoropolymers, preparation

RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP (Preparation); USES (Uses)

(polyamide-polyether-; Pos.-working **photosensitive** resin composition)

IT Polyamic acids

Polyamides, preparation

Polyimides, preparation

RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP (Preparation); USES (Uses)

(polyether-, fluorine-containing; Pos.-working **photosensitive** resin composition)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP  
 (Preparation); USES (Uses)  
 (polyether-polyimide-; Pos.-working **photosensitive** resin  
 composition)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP  
 (Preparation); USES (Uses)  
 (polyimide-, fluorine-containing; Pos.-working **photosensitive**  
 resin composition)

IT 80500-54-5P **112480-82-7P** 121509-31-7P 121509-63-5P  
 133440-72-9P 142007-34-9P 350613-69-3P  
 RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP  
 (Preparation); USES (Uses)  
 (Pos.-working **photosensitive** resin composition)

IT 7158-32-9P 350613-67-1P 350613-68-2P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation of component of pos.-working **photosensitive** resin  
 composition)

IT 71-23-8, n-Propyl alcohol, reactions 81-25-4, Cholic acid 1823-59-2  
 2215-89-6, 4,4'Diphenyl ether dicarboxylic acid 83558-87-6,  
 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of component of pos.-working **photosensitive** resin  
 composition)

L9 ANSWER 2 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:1282180 CAPLUS

DN 144:29759

ED Entered STN: 08 Dec 2005

TI Positive working **photosensitive** resin composition containing  
 hydroxypolyamide, phenol and diazoquinone compound and semiconductor  
 device

IN Sasaki, Takahiro

PA Asahi Kasei Electronics Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 19 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-037

ICS G03F007-004; H01L021-027

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

Section cross-reference(s): 38, 76

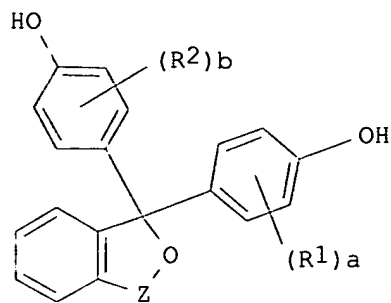
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005338481	A2	20051208	JP 2004-157812	20040527
PRAI	JP 2004-157812		20040527		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005338481	ICM	G03F007-037
	ICS	G03F007-004; H01L021-027
	IPCI	G03F0007-037 [ICM,7]; G03F0007-004 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA02; 2H025/AA10; 2H025/AB16; 2H025/AC01; 2H025/AD03; 2H025/BE01; 2H025/CB24; 2H025/CB45; 2H025/CC20; 2H025/FA17

GI



I

- AB The composition contains 100 weight parts of a hydroxypolyamide with a repeating unit  $[\text{HN}(\text{OH})\text{X}_1(\text{OH})\text{NHCOR}_1\text{CO}]_m[\text{HNX}_2\text{NHCOR}_2\text{CO}]_n$  [ $\text{X}_1 = \text{C} \geq 2$  4-valent organic group;  $\text{X}_2, \text{Y}_1, \text{Y}_2 = \text{C} \geq 2$  bivalent organic group;  $m = 2-1000$ ;  $n = 0-500$ ;  $m/(m+n) > 0.5$ ], 1-30 weight parts of a phenol compound I ( $\text{R}_1, \text{R}_2 = \text{alkyl, halo, OH, alkoxy, etc.}$ ;  $a, b = 0-4$ ;  $Z = \text{carbonyl, thiocarbonyl, sulfonyl}$ ), and 1-100 weight parts of a light-sensitive diazoquinone compound. The method comprises the following steps: (1) forming a pos. working light-sensitive resin composition layer or film on a plate; (2) exposing the layer or film to actinic ray through a mask or directly exposing it to light, electron rays, or ion rays; (3) eluting or removing an exposed or irradiated area; and (4) heating an obtained relief pattern. The semiconductor device having the hardened relief pattern, is also claimed. The composition shows improved sensitivity, resolving power, and residue removability.
- ST **photoresist** hydroxypolyamide phenol diazoquinone compd;  
semiconductor device hardened **photosensitive** resin pattern
- IT Polyamides, preparation  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluorine-containing; pos. **photosensitive** resin composition containing hydroxypolyamide, phenol compound and diazoquinone compound)
- IT Polyethers, preparation  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-, fluorine-containing; pos. **photosensitive** resin composition containing hydroxypolyamide, phenol compound and diazoquinone compound)
- IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-, pos. **photosensitive** resin composition containing hydroxypolyamide, phenol compound and diazoquinone compound)
- IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-polyether-, pos. **photosensitive** resin composition containing hydroxypolyamide, phenol compound and diazoquinone compound)
- IT Polyamides, preparation  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-, fluorine-containing; pos. **photosensitive** resin composition containing hydroxypolyamide, phenol compound and diazoquinone compound)
- IT **Photoimaging** materials  
(pos. **photosensitive** resin composition containing hydroxypolyamide, phenol compound and diazoquinone compound)
- IT Polyamides, preparation  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos. **photosensitive** resin composition containing hydroxypolyamide, phenol compound and diazoquinone compound)
- IT Semiconductor device fabrication  
(pos. **photosensitive** resin composition containing hydroxypolyamide, phenol compound and diazoquinone compound for semiconductor device)

fabrication)

IT 85-42-7DP, 1,2-Cyclohexane dicarboxylic anhydride, reaction products with hydroxypolyamide 7158-32-9DP, reaction products with hydroxypolyamide 112480-82-7DP, reaction products with cyclohexanedicarboxylic anhydride 133440-72-9DP, reaction products with cyclohexanedicarboxylic anhydride 349081-06-7DP, reaction products with di-Ph ether dicarboxylic acid chloride 349081-07-8DP, reaction products with di-Ph ether dicarboxylic acid chloride 502495-82-1P 870247-88-4P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (pos. **photosensitive** resin composition containing hydroxypolyamide, phenol compound and diazoquinone compound)

IT 77-09-8 125-20-2  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (pos. **photosensitive** resin composition containing hydroxypolyamide, phenol compound and diazoquinone compound)

IT 120663-39-0P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of diazoquinone compound)

IT 826-62-0, 5-Norbornene-2,3-dicarboxylic anhydride 36451-09-9, 1,2-Naphthoquinonediazide-4-sulfonyl chloride 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)-hexafluoropropane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of diazoquinone compound)

L9 ANSWER 3 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2005:1198333 CAPLUS  
 DN 143:469599  
 ED Entered STN: 11 Nov 2005  
 TI Naphthoquinonediazidesulfonates, positive-working polyamide **photoimaging** compositions containing them, and manufacture of semiconductor devices and displays  
 IN Yano, Tatsuya; Ikeda, Hiroshi; Banba, Toshio; Hirano, Takashi  
 PA Sumitomo Bakelite Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 51 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM C07C309-26  
 ICS C07C309-52; G03F007-004; G03F007-022; G03F007-037; H01L021-027  
 CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 25, 38

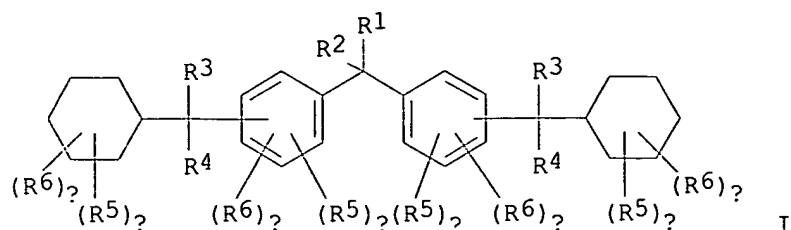
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005314243	A2	20051110	JP 2004-131448	20040427
PRAI	JP 2004-131448		20040427		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005314243	ICM	C07C309-26
	ICS	C07C309-52; G03F007-004; G03F007-022; G03F007-037; H01L021-027
	IPCI	C07C0309-26 [ICM,7]; C07C0309-52 [ICS,7]; G03F0007-004 [ICS,7]; G03F0007-022 [ICS,7]; G03F0007-037 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA01; 2H025/AA02; 2H025/AA03; 2H025/AA04; 2H025/AB16; 2H025/AC01; 2H025/AD03; 2H025/BE01; 2H025/CB23; 2H025/CB25; 2H025/CB33; 2H025/CB41; 2H025/CB43; 2H025/CB45; 2H025/CC20; 2H025/FA17; 4H006/AA02; 4H006/AA03; 4H006/AB92

GI



- AB The naphthoquinonediazidesulfonates, useful as **photosensitizers** for the compns., are 1,2-naphthoquinone-2-diazido-4- or 5-sulfonates of phenols I (R1-R5 = H, C1-8 alkyl, alkoxy, ester; R6 = OH, H, C1-8 alkyl, HOC6H6CH2;  $\geq 1$  of R6 = OH;  $\alpha, \beta = 0-4$ ;  $\gamma, \delta = 0-5$ ;  $\alpha + \beta = 0-4$ ;  $\gamma + \delta = 0-5$ ;  $\beta + \delta \neq 0$ ). In the manufacture, the compns. are applied on substrates for semiconductor devices or displays in such a way that thickness of the layers is 0.1-30  $\mu\text{m}$  after dehydration ring closure, prebaked, exposed to light, developed, and postbaked. The compns. produce high-resolution images as surface protective films or interlayer insulating films for the devices and displays.
- ST naphthoquinone diazide sulfonate pos **photoimaging** polyamide;  
display **photoimaging** naphthoquinone diazide sulfonate  
**photosensitizer**; semiconductor device **photoimaging**  
naphthoquinone diazide sulfonate **photosensitizer**
- IT Polyamides, reactions  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(fluorine- and hydroxy-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide  
**photoimaging** compns. for manufacture of semiconductor devices and displays)
- IT Polybenzoxazoles  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluorine-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide  
**photoimaging** compns. for manufacture of semiconductor devices and displays)
- IT Optical imaging devices  
**Photoimaging** materials  
Semiconductor devices  
(naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)
- IT Polyethers, reactions  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyamic acid-polyamide-, fluorine-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)
- IT Fluoropolymers, reactions  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyamic acid-polyamide-polyether-; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide  
**photoimaging** compns. for manufacture of semiconductor devices and displays)
- IT Polyamides, reactions  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyamic acid-polyether-, fluorine-containing;



naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polyethers, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (polyamide-, fluorine- and hydroxy-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Fluoropolymers, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (polyamide-, hydroxy-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polyamic acids  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (polyamide-polyether-, fluorine-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Fluoropolymers, reactions  
 Polysulfones, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (polyamide-polyether-, hydroxy-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polyethers, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (polyamide-polysulfone-, hydroxy-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polyethers, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-, fluorine-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Fluoropolymers, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polyimides, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-, fluorine-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Fluoropolymers, preparation  
 Polysulfones, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polybenzoxazole-polyether-; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Fluoropolymers, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-polyimide-; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polyethers, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyimide-, fluorine-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polyethers, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polysulfone-; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polyamides, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (polyether-, fluorine- and hydroxy-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polybenzoxazoles  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polybenzoxazoles  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polyimide-, fluorine-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polyamides, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (polyether-polysulfone-, hydroxy-containing; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT Polybenzoxazoles  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polysulfone-; naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT 242460-68-ODP, reaction product with norbornenedicarboxylic acid  
 242460-72-6DP, reaction product with norbornenedicarboxylic acid  
 242460-73-7DP, reaction product with norbornenedicarboxylic acid  
**683774-90-5P** 817172-56-8P  
 RL: DEV (Device component use); IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT 826-62-ODP, 5-Norbornene-2,3-dicarboxylic anhydride, reaction products with hydroxy-containing polyamides, dehydrated 26010-72-ODP, reaction product with norbornenedicarboxylic acid 112480-83-8DP, reaction product with norbornenedicarboxylic acid 113742-47-5DP, reaction product with norbornenedicarboxylic acid 868781-70-8P 868784-01-4P 868784-02-5P 868784-03-6P

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT 80-05-7, Bisphenol A, uses 110726-28-8

RL: DEV (Device component use); MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

IT 56793-42-1DP, reaction product with norbornenedicarboxylic acid 112480-82-7DP, reaction product with norbornenedicarboxylic acid 113742-48-6DP, reaction product with norbornenedicarboxylic acid

RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(naphthoquinonediazidesulfonates as **photosensitizers** for pos.-working polyamide **photoimaging** compns. for manufacture of semiconductor devices and displays)

L9 ANSWER 4 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:1003609 CAPLUS

DN 143:295595

ED Entered STN: 16 Sep 2005

TI Positively **photosensitive** polymer compositions and manufacture of semiconductor devices and display devices using them

IN Hirano, Takashi; Banba, Toshio

PA Sumitomo Bakelite Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 30 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-023

ICS C08G073-10; C08G073-22; G03F007-037; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005249847	A2	20050915	JP 2004-56266	20040301
PRAI	JP 2004-56266		20040301		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005249847	ICM	G03F007-023
	ICS	C08G073-10; C08G073-22; G03F007-037; H01L021-027
	IPI	G03F0007-023 [ICM,7]; C08G0073-10 [ICS,7]; C08G0073-22 [ICS,7]; G03F0007-037 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA01; 2H025/AA04; 2H025/AB16; 2H025/AC01; 2H025/AD03; 2H025/BE01; 2H025/CB23; 2H025/CB25; 2H025/CB26; 2H025/CB28; 2H025/CB33; 2H025/FA17; 4J043/PA02; 4J043/PA04; 4J043/PA19; 4J043/PB02; 4J043/PB03; 4J043/PB04; 4J043/PB05; 4J043/PB23; 4J043/QB15; 4J043/QB23; 4J043/QB24; 4J043/QB25; 4J043/QB26; 4J043/QB31; 4J043/QB32; 4J043/QB33; 4J043/QB34; 4J043/RA06; 4J043/RA24; 4J043/RA35; 4J043/RA52; 4J043/SA06; 4J043/SA42; 4J043/SA51; 4J043/SA71; 4J043/SA72; 4J043/SB01; 4J043/SB02;

4J043/TA02; 4J043/TA06; 4J043/TA12; 4J043/TA13;  
 4J043/TA14; 4J043/TA21; 4J043/TA22; 4J043/TA31;  
 4J043/TA32; 4J043/TA33; 4J043/TA41; 4J043/TA66;  
 4J043/TB01; 4J043/TB02; 4J043/UA121; 4J043/UA122;  
 4J043/UA131; 4J043/UA132; 4J043/UA151; 4J043/UA152;  
 4J043/UA261; 4J043/UA331; 4J043/UA362; 4J043/UA621;  
 4J043/UB011; 4J043/UB012; 4J043/UB021; 4J043/UB022;  
 4J043/UB061; 4J043/UB062; 4J043/UB121; 4J043/UB122;  
 4J043/UB151; 4J043/UB152; 4J043/UB231; 4J043/UB232;  
 4J043/UB281; 4J043/UB282; 4J043/UB301; 4J043/UB302;  
 4J043/UB321; 4J043/UB351; 4J043/WA09; 4J043/WA16;  
 4J043/XB05; 4J043/XB06; 4J043/XB07; 4J043/ZB22

- AB The compns. comprise (A) alkali-soluble polymers, (B) diazoquinone compds., and (C) PhOH-dicyclopentadiene copolymers. The semiconductor or display devices are manufactured by applying the compns. on semiconductor elements to give 0.1-50- $\mu$ m films after ring closure by hot dehydration, prebaking, exposing, developing, and heating. The compns. are useful for surface-protective films or interlayer insulating films in semiconductor or display devices. The compns. show high sensitivity and low water absorption.
- ST **photoresist** dicyclopentadiene phenol copolymer water absorption;  
 pos **photoresist** dicyclopentadiene phenol copolymer  
 semiconductor; display pos **photoresist** dicyclopentadiene phenol  
 copolymer
- IT Polyamic acids  
 RL: DEV (Device component use); TEM (Technical or engineered material  
 use); USES (Uses)  
 (esters; pos. **photosensitive** polymer compns. with low water  
 absorption for manufacture of semiconductors and displays)
- IT Polyamides, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (fluorine-containing; pos. **photosensitive** polymer compns. with  
 low water absorption for manufacture of semiconductors and displays)
- IT Polyethers, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-, fluorine-containing; pos. **photosensitive** polymer  
 compns. with low water absorption for manufacture of semiconductors and  
 displays)
- IT Fluoropolymers, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-; pos. **photosensitive** polymer compns. with low  
 water absorption for manufacture of semiconductors and displays)
- IT Fluoropolymers, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyether-; pos. **photosensitive** polymer compns.  
 with low water absorption for manufacture of semiconductors and displays)
- IT Polyamides, preparation  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing; pos. **photosensitive** polymer  
 compns. with low water absorption for manufacture of semiconductors and  
 displays)
- IT Optical imaging devices  
 Positive **photoresists**  
 Semiconductor device fabrication  
 Semiconductor devices  
 (pos. **photosensitive** polymer compns. with low water  
 absorption for manufacture of semiconductors and displays)
- IT Polybenzoxazoles  
 Polyimides, uses  
 RL: DEV (Device component use); TEM (Technical or engineered material  
 use); USES (Uses)  
 (pos. **photosensitive** polymer compns. with low water  
 absorption for manufacture of semiconductors and displays)
- IT 137902-98-8D, naphthoquinonediazidosulfonate derivs. 155123-67-4D,

naphthoquinonediazidosulfonate derivs.  
 RL: CAT (Catalyst use); USES (Uses)  
 (pos. **photosensitive** polymer compns. with low water  
 absorption for manufacture of semiconductors and displays)

IT 249529-90-6P 249529-92-8P 817172-56-8P **864236-57-7P**  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (pos. **photosensitive** polymer compns. with low water  
 absorption for manufacture of semiconductors and displays)

IT 625095-54-7, DPP 6085 853101-90-3, DPP 6095  
 RL: DEV (Device component use); MOA (Modifier or additive use); TEM  
 (Technical or engineered material use); USES (Uses)  
 (pos. **photosensitive** polymer compns. with low water  
 absorption for manufacture of semiconductors and displays)

L9 ANSWER 5 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2005:734314 CAPLUS  
 DN 143:336149  
 ED Entered STN: 12 Aug 2005  
 TI Positive-working aqueous base developable **photosensitive**  
 polybenzoxazole precursor/organoclay nanocomposites  
 AU Hsu, Steve Lien-Chung; Lin, Chi-Yi; Chuang, Shih-Wei  
 CS Department of Material Science & Engineering, National Cheng-Kung  
 University, Tainan, 701-01, Taiwan  
 SO Journal of Applied Polymer Science (2005), 97(6), 2350-2356  
 CODEN: JAPNAB; ISSN: 0021-8995  
 PB John Wiley & Sons, Inc.  
 DT Journal  
 LA English  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 37

AB Pos.-working aqueous base developable **photosensitive** polybenzoxazole  
 (PBO) precursor/organoclay nanocomposites were prepared through the addition of  
 an organoclay to a PBO precursor. The organoclay was formed by a cation  
 exchange reaction between a Na<sup>+</sup>-montmorillonite clay and an ammonium salt  
 of dodecylamine. The PBO precursor is a polyhydroxyamide that was prepared  
 from a low-temperature polymerization of 2'2'-bis(3-amino-4-hydroxyphenyl)  
 hexafluoropropane and 4,4'-oxydibenzoyl chloride with an inherent  
 viscosity of 0.3 dL/g. The **photosensitive** resin/clay  
 formulations were prepared from the precursor with 2,3,4-tris(1-oxo-2-  
 diazonaphthoquinone-5-sulfonyloxy)-benzophenone **photosensitive**  
 compound and 3-5% organoclay. The PBO precursor/clay was subsequently  
 thermally cured to PBO/clay at 350°. Both x-ray diffraction and  
 transmission electron microscope analyses showed that the organoclay was  
 dispersed in the PBO matrix in a nanometer scale. The thermal expansion  
 coefficient of PBO/clay film, which contained 5% organoclay, decreased by 33%  
 compared to the pure PBO film. The PBO/clay nanocomposite films also  
 displayed higher thermal stability, glass transition temperature, and water  
 resistance than the pure PBO film. The **photosensitive** PBO  
 precursor/clay nanocomposite showed a line/space pattern with a resolution of  
 5 µm and the sensitivity and contrast were not affected by the  
 organoclay.

ST **photosensitive** polybenzoxazole organoclay nanocomposite prepn  
 stability **photoresist** pattern

IT Clays, properties  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP  
 (Physical process); PROC (Process)  
 (montmorillonitic, dodecylammonium exchanged; preparation and thermal  
 stability and **photopatterning** of water-soluble  
 polybenzoxazole/organoclay pos. **photoresist** nanocomposites)

IT Crosslinking  
 (**photochem.**; preparation and thermal stability and  
**photopatterning** of water-soluble polybenzoxazole/organoclay pos.  
**photoresist** nanocomposites)

IT Polyethers, processes  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical  
 process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (polyamide-, fluorine-containing; preparation and thermal stability and

**photopatterning** of water-soluble polybenzoxazole/organoclay pos.  
**photoresist** nanocomposites)

IT Fluoropolymers, processes  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (polyamide-polyether-; preparation and thermal stability and  
**photopatterning** of water-soluble polybenzoxazole/organoclay pos.  
**photoresist** nanocomposites)

IT Polyethers, properties  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (polybenzoxazole-, fluorine-containing; preparation and thermal stability and  
**photopatterning** of water-soluble polybenzoxazole/organoclay pos.  
**photoresist** nanocomposites)

IT Fluoropolymers, properties  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (polybenzoxazole-polyether-; preparation and thermal stability and  
**photopatterning** of water-soluble polybenzoxazole/organoclay pos.  
**photoresist** nanocomposites)

IT Polybenzoxazoles  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (polyether-, fluorine-containing; preparation and thermal stability and  
**photopatterning** of water-soluble polybenzoxazole/organoclay pos.  
**photoresist** nanocomposites)

IT Polyamides, processes  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (polyether-, fluorine-containing; preparation and thermal stability and  
**photopatterning** of water-soluble polybenzoxazole/organoclay pos.  
**photoresist** nanocomposites)

IT Glass transition temperature  
 Nanocomposites  
 Positive **photoresists**  
 Thermal stability  
 (preparation and thermal stability and **photopatterning** of water-soluble polybenzoxazole/organoclay pos. **photoresist** nanocomposites)

IT Crosslinking  
 (thermal; preparation and thermal stability and **photopatterning** of water-soluble polybenzoxazole/organoclay pos. **photoresist** nanocomposites)

IT 7158-32-9P, 4,4'-Oxydibenzoyl chloride  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer; preparation and thermal stability and **photopatterning** of water-soluble polybenzoxazole/organoclay pos. **photoresist** nanocomposites)

IT 5610-94-6, 2,3,4-Tris(1-oxo-2-Diazonaphthoquinone-5-sulfonyloxy)benzophenone  
 RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
 (**photosensitizer**; preparation and thermal stability and  
**photopatterning** of water-soluble polybenzoxazole/organoclay pos.  
**photoresist** nanocomposites)

IT 112480-83-8P 133440-72-9P  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (preparation and thermal stability and **photopatterning** of water-soluble polybenzoxazole/organoclay pos. **photoresist** nanocomposites)

IT **112480-82-7P**  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)

(preparation and thermal stability and **photopatterning** of water-soluble polybenzoxazole/organoclay pos. **photoresist** nanocomposites)

IT 2215-89-6, 4,4'-Oxybis(benzoic acid) 7719-09-7, Thionyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation and thermal stability and **photopatterning** of water-soluble polybenzoxazole/organoclay pos. **photoresist** nanocomposites)

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

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L9 ANSWER 6 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:673492 CAPLUS

DN 143:163090

ED Entered STN: 29 Jul 2005

TI **Photosensitive** polymer composition, process for producing pattern, and electronic part

IN Ooe, Masayuki; Komatsu, Hiroshi; Tsumaru, Yoshiko; Kawasaki, Dai; Katou, Kouji; Ueno, Takumi

PA Hitachi Chemical Dupont Microsystems Ltd., Japan

SO PCT Int. Appl., 31 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

IC ICM G03F007-037

ICS G03F007-039; G03F007-004; C08G069-26; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005069075	A1	20050728	WO 2004-JP18832	20041216
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW:				
	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

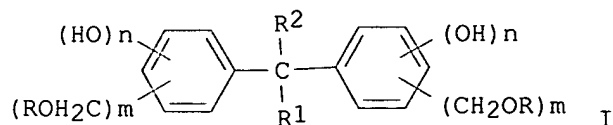
PRAI JP 2004-6715 A 20040114

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2005069075	ICM	G03F007-037

ICS G03F007-039; G03F007-004; C08G069-26; H01L021-027  
 IPCI G03F0007-037 [ICM,7]; G03F0007-039 [ICS,7];  
 G03F0007-004 [ICS,7]; C08G0069-26 [ICS,7]; H01L0021-027  
 [ICS,7]  
 IPCR C08G0069-00 [I,C]; C08G0069-26 [I,A]; G03F0007-004  
 [I,A]; G03F0007-004 [I,C]; G03F0007-032 [I,C];  
 G03F0007-037 [I,A]; G03F0007-039 [I,A]; G03F0007-039  
 [I,C]; H01L0021-02 [I,C]; H01L0021-027 [I,A]

GI



- AB A **photosensitive** polymer composition which comprises (a) a polyamide having repeating units represented by the following general formula -[NH-U(OH)2-NH-CO-V-CO]p- {U = tetravalent organic group; V = divalent organic group; p = integer}, (b) a compound which generates an acid by the action of light, and (c) a compound represented by the following general formula I {m, n = 1, 2; R = H, alkyl, acyl; R1, R2 = Cl-3-fluoroalkyl}.
- ST **photosensitive** polymer compn **photoresist** electronic device fabrication heat resistant
- IT Coating materials  
 (heat-resistant; **photosensitive** polymer composition, process for producing pattern, and electronic part)
- IT **Photoimaging** materials  
 (**photopolymerizable**; **photosensitive** polymer composition, process for producing pattern, and electronic part)
- IT Electronic device fabrication  
**Photoresists**  
 (**photosensitive** polymer composition, process for producing pattern, and electronic part)
- IT Polybenzoxazoles  
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PYP (Physical process); PREP (Preparation); PROC (Process); USES (Uses)  
 (**photosensitive** polymer composition, process for producing pattern, and electronic part)
- IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-, fluorine- and hydroxy-containing; **photosensitive** polymer composition, process for producing pattern, and electronic part)
- IT Fluoropolymers, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyether-, hydroxy-containing; **photosensitive** polymer composition, process for producing pattern, and electronic part)
- IT Polyamides, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine- and hydroxy-containing; **photosensitive** polymer composition, process for producing pattern, and electronic part)
- IT 238091-14-0P  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (**photosensitive** polymer composition, process for producing pattern, and electronic part)
- IT 591-27-5DP, m-Aminophenol, termination products with 4,4'-dicarboxydiphenyl ether dichloride-2,2-bis(3-amino-4-hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane copolymer 4023-34-1DP, Cyclopropylcarbonyl chloride, termination products with 4,4'-dicarboxydiphenyl ether dichloride-2,2-bis(3-amino-4-hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane



copolymer 112480-82-7P 133440-72-9DP, 4,4'-Dicarbonylchloride  
diphenyl ether-2,2-bis(3-amino-4-hydroxyphenyl)-1,1,1,3,3,3-  
hexafluoropropane copolymer, cyclopropylcarbonyl-terminated  
133440-72-9DP, m-aminophenol-terminated  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(**photosensitive** polymer composition, process for producing  
pattern, and electronic part)

IT 722-56-5, Diphenyl iodonium nitrate 4420-74-0,  $\gamma$ -  
Mercaptopropyltrimethoxysilane 441768-78-1 859843-89-3  
RL: TEM (Technical or engineered material use); USES (Uses)  
(**photosensitive** polymer composition, process for producing  
pattern, and electronic part)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE  
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CAPLUS  
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(8) Toray Industries Inc; EP 1365289 A1 2002 CAPLUS  
(9) Toray Industries Inc; JP 2002327472 A 2002 CAPLUS

L9 ANSWER 7 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:646099 CAPLUS  
DN 143:306882  
ED Entered STN: 25 Jul 2005  
TI A novel low temperature curable **photosensitive** polybenzoxazole  
AU Toyokawa, Fumihiko; Shibasaki, Yuji; Ueda, Mitsuru  
CS Department of Organic and Polymeric Materials, Graduate School of Science  
and Engineering, Tokyo Institute of Technology, Tokyo, 152-8552, Japan  
SO Polymer Journal (Tokyo, Japan) (2005), 37(7), 517-521  
CODEN: POLJB8; ISSN: 0032-3896  
PB Society of Polymer Science, Japan  
DT Journal  
LA English  
CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35, 36, 73

AB A novel pos.-tone **photosensitive** polybenzoxazole for low temperature  
cyclization has been developed. The matrix polymer (PHA-6F) was prepared  
from 4,4'-(hexafluoroisopropylidene)bis(o-aminophenol) (6FAP) and  
4,4'-oxybis(benzoyl chloride) (OBBC) by low temperature solution polycondensation,  
and the **photosensitive** polymer was formulated with PHA-6F, a  
dissoln. inhibitor 1-(1,1-bis[4-(2-diazo-1-(2H)naphthalenone-4-  
sulfonyloxy)-phenyl]ethyl)-4-[1-[4-(2-diazo-1(2H)naphthalenone-4-  
sulfonyloxy)phenyl]methylethyl]benzene (S-DNQ), and a **photo-** and  
thermoacid generator (5-propylsulfonyloxyimino-5H-thiophen-2-ylidene)-2-  
(methylphenyl)acetonitrile (PTMA). The **photosensitivity** and  
contrast of the 2.4  $\mu\text{m}$  thick film were 15 mJ/cm<sup>2</sup> and 2.5, resp. A  
clear pos. polybenzoxazole image featuring 8  $\mu\text{m}$  line-and-space pattern  
was obtained, when a 2.1  $\mu\text{m}$ - **photosensitive** film containing  
PHA-6F, S-DNQ, and PTMA (15:3:2 in weight ratio) was prebaked at 120°  
for 5 min, irradiated with 365 nm light (60 mJ/cm<sup>2</sup>), developed with an  
2.38 wt% tetramethylammonium hydroxide (TMAH) solution for 90 s, washed with  
acetic acid, and cured at 250° for 10 min.

ST **photosensitive** polybenzoxazole cyclization line lithog  
thermoacid generator

IT Cyclization catalysts  
(effect on preparation of low temperature curable **photosensitive**  
polybenzoxazole)

IT Polyethers, preparation  
RL: POF (Polymer in formulation); PRP (Properties); RCT (Reactant); SPN  
(Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent);  
USES (Uses)  
(polyamide-, fluorine-containing; preparation and properties of low temperature  
curable **photosensitive** polybenzoxazole)

IT Fluoropolymers, preparation  
 RL: POF (Polymer in formulation); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (polyamide-polyether-; preparation and properties of low temperature curable **photosensitive** polybenzoxazole)

IT Polyethers, preparation  
 RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-, fluorine-containing; preparation and properties of low temperature curable **photosensitive** polybenzoxazole)

IT Fluoropolymers, preparation  
 RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-; preparation and properties of low temperature curable **photosensitive** polybenzoxazole)

IT Polyamides, preparation  
 RL: POF (Polymer in formulation); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (polyether-, fluorine-containing; preparation and properties of low temperature curable **photosensitive** polybenzoxazole)

IT Polybenzoxazoles  
 RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing; preparation and properties of low temperature curable **photosensitive** polybenzoxazole)

IT Dissolution  
 Light-sensitive materials  
 Polymerization catalysts  
 (preparation and properties of low temperature curable **photosensitive** polybenzoxazole)

IT 75-75-2, Methanesulfonic acid 99-96-7, 4-Hydroxybenzoic acid, uses 104-15-4, p-Toluenesulfonic acid, uses 288-32-4, Imidazole, uses 6674-22-2  
 RL: CAT (Catalyst use); USES (Uses)  
 (cyclization catalyst; effect on preparation of low temperature curable **photosensitive** polybenzoxazole)

IT 142541-99-9, S-DNQ  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (dissoln. inhibitor; preparation and properties of low temperature curable **photosensitive** polybenzoxazole)

IT 75-59-2, Tetramethylammonium hydroxide  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (preparation and properties of low temperature curable **photosensitive** polybenzoxazole)

IT **112480-82-7P**  
 RL: POF (Polymer in formulation); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (preparation and properties of low temperature curable **photosensitive** polybenzoxazole)

IT 112480-83-8P 133440-72-9P  
 RL: POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation and properties of low temperature curable **photosensitive** polybenzoxazole)

IT 282713-83-1  
 RL: CAT (Catalyst use); USES (Uses)  
 (thermoacid generator; preparation and properties of low temperature curable **photosensitive** polybenzoxazole)

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L9 ANSWER 8 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:569814 CAPLUS

DN 143:86710

ED Entered STN: 01 Jul 2005

TI Positive-working light-sensitive resin composition for fabricating relief pattern for manufacturing electronic devices

IN Kawasaki, Hiroshi

PA Hitachi Chemical Du Pont Micro System Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-037

ICS C08G073-22; G03F007-004; G03F007-039; G03F007-38; G03F007-40;  
H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005173528	A2	20050630	JP 2004-128213	20040423
PRAI	JP 2003-389219	A	20031119		

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005173528	ICM	G03F007-037
	ICS	C08G073-22; G03F007-004; G03F007-039; G03F007-38; G03F007-40; H01L021-027
	IPCI	G03F0007-037 [ICM,7]; C08G0073-22 [ICS,7]; G03F0007-004 [ICS,7]; G03F0007-039 [ICS,7]; G03F0007-38 [ICS,7]; G03F0007-40 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA02; 2H025/AA10; 2H025/AA14; 2H025/AB16; 2H025/AB17; 2H025/AC01; 2H025/AD03; 2H025/BE00; 2H025/CB25; 2H025/CB45; 2H025/CC20; 2H025/FA01; 2H025/FA12; 2H096/AA27; 2H096/BA09; 2H096/EA02; 2H096/FA01; 2H096/HA01; 4J043/PA01; 4J043/PA19; 4J043/QB34; 4J043/RA52; 4J043/SA06; 4J043/SA71; 4J043/SB01; 4J043/TA26; 4J043/TA42; 4J043/TA45; 4J043/TA47; 4J043/TA66; 4J043/TB01; 4J043/TB02; 4J043/UA022; 4J043/UA121; 4J043/UA122; 4J043/UA131; 4J043/UA132; 4J043/UA152; 4J043/UA262; 4J043/UB021; 4J043/UB022; 4J043/UB061; 4J043/UB062; 4J043/UB122;

4J043/UB301; 4J043/UB302; 4J043/UB312; 4J043/UB401;  
 4J043/UB402; 4J043/VA012; 4J043/VA021; 4J043/VA022;  
 4J043/VA042; 4J043/VA052; 4J043/VA061; 4J043/VA082;  
 4J043/XA16; 4J043/XB33; 4J043/YA23; 4J043/ZA02;  
 4J043/ZB50

- AB The title composition contains poly(benzoxazole) precursor, an actinic ray-sensitive acid generator, a 2-valent organic transition metal compound, and a solvent, wherein the poly(benzoxazole) precursor has repeating unit[-CO-R1-CO-NH-R2(OH)2-NH-](R1 = 2-valent organic group containing ≥1 aromatic rings; R2 = 4-valent organic group containing ≥1 aromatic rings) and wherein the 2-valent organic transition metal compound has general structure (R3-CO-CH=C(R3)-)2 M( R3 = H, mono-valent organic group; M = 2-valent transition metal). The composition provides pattern showing good contact with Cu substrates.
- ST pos light resin compn relief pattern electronic device
- IT **Photoimaging materials**  
 (photopolymerizable; pos.-working light-sensitive resin composition for fabricating relief pattern for manufacturing electronic devices)
- IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-, fluorine-containing; pos.-working light-sensitive resin composition)
- IT Fluoropolymers, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyether-; pos.-working light-sensitive resin composition)
- IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-, fluorine-containing; pos.-working light-sensitive resin composition)
- IT Fluoropolymers, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-; pos.-working light-sensitive resin composition)
- IT Polyamides, preparation  
 Polybenzoxazoles  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing; pos.-working light-sensitive resin composition)
- IT Embossing  
 Semiconductor devices  
 (pos.-working light-sensitive resin composition for fabricating relief pattern for manufacturing electronic devices)
- IT 96-48-0, γ-Butyrolactone  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (pos.-working light-sensitive resin composition)
- IT 50855-87-3, Diphenyl ether dicarboxylic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (pos.-working light-sensitive resin composition)
- IT 110-87-2DP, 3,4-Dihydro-2H-pyran, reaction product with styrene derivative polymer 603-44-1DP, Tris(4-hydroxyphenyl)methane, reaction product with sulfonyl chloride 3770-97-6DP, reaction product with tris(4-hydroxyphenyl)methane 24979-70-2DP, Maruka Lyncur M, reaction product with 3,4-dihydro-2H-pyran **112480-82-7P** 112480-83-8P 133440-72-9P, Diphenyl ether 4,4'-dicarbonyl dichloride-2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane copolymer  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (pos.-working light-sensitive resin composition)
- IT 123-54-6D, 2,4-Pentadione, complex with copper 7440-50-8D, Copper, complex with 2,4-pentadione  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (pos.-working light-sensitive resin composition)

DN 143:86699  
 ED Entered STN: 24 Jun 2005  
 TI Positive-working light-sensitive heat-resistant resin composition for semiconductor device fabrication  
 IN Tsumaru, Keiko  
 PA Hitachi Chemical Du Pont Micro System Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03F007-037  
 ICS C08G073-06; C08G073-22; G03F007-022; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 37, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005165185	A2	20050623	JP 2003-407255	20031205
PRAI	JP 2003-407255		20031205		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005165185	ICM	G03F007-037
	ICS	C08G073-06; C08G073-22; G03F007-022; H01L021-027
	IPCI	G03F0007-037 [ICM,7]; C08G0073-06 [ICS,7]; C08G0073-22 [ICS,7]; G03F0007-022 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA01; 2H025/AA02; 2H025/AA04; 2H025/AA10; 2H025/AB16; 2H025/AC01; 2H025/AD03; 2H025/CB25; 2H025/CB26; 2H025/CB45; 2H025/CB55; 2H025/CB56; 2H025/FA17; 4J043/PA04; 4J043/PB22; 4J043/PC065; 4J043/PC066; 4J043/QB33; 4J043/QB61; 4J043/RA52; 4J043/SA06; 4J043/SA16; 4J043/TA03; 4J043/TA12; 4J043/UA012; 4J043/UA022; 4J043/UA032; 4J043/UA042; 4J043/UA082; 4J043/UA122; 4J043/UA131; 4J043/UA132; 4J043/UA262; 4J043/UB021; 4J043/UB061; 4J043/UB062; 4J043/UB122; 4J043/ZA12; 4J043/ZA46; 4J043/ZB50; 4J043/ZB60

AB The title composition contains a light-sensitive heat-resistant resin or its precursor, a polyamic acid ester having OH groups, and light-sensitive compds., wherein the resin has general structure Z-CO-NH-Y(OR)2-NH-[-CO-X-CO-NH-Y(OR)2-NH-]n-CO-Z (X = 2-valent organic group; Y = 4-valent organic group; Z = ring system not having unsatd. bond; R = H, mono-valent organic group; n = 2-500). The composition shows high light-sensitivity and provides good pattern profile and good pattern layer thickness.

ST pos light heat resistant resin compn semiconductor fabrication

IT Heat-resistant materials  
 (dielec.; light-sensitive heat-resistant resin composition for semiconductor device fabrication)

IT Electric insulators  
 (heat-resistant; light-sensitive heat-resistant resin composition for semiconductor device fabrication)

IT Light-sensitive materials  
 Semiconductor device fabrication  
 (light-sensitive heat-resistant resin composition for semiconductor device fabrication)

IT **Photoimaging** materials  
 (**photopolymerizable**; light-sensitive heat-resistant resin composition for semiconductor device fabrication)

IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-, fluorine-containing; resin in light-sensitive heat-resistant resin composition for semiconductor device fabrication)

IT Fluoropolymers, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyether-; resin in light-sensitive heat-resistant resin composition for semiconductor device fabrication)

IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-, fluorine-containing; resin in light-sensitive heat-resistant resin composition for semiconductor device fabrication)

IT Fluoropolymers, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-; resin in light-sensitive heat-resistant resin composition for semiconductor device fabrication)

IT Polyamides, preparation  
 Polybenzoxazoles  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing; resin in light-sensitive heat-resistant resin composition for semiconductor device fabrication)

IT **112480-82-7P** 112480-83-8P 112492-60-1P, 4,4'-Oxybis(benzoic acid)-2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane copolymer 133440-72-9P, 4,4'-Oxybis(benzoic acid chloride)-2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane copolymer  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (resin in light-sensitive heat-resistant resin composition for semiconductor device fabrication)

L9 ANSWER 10 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:257433 CAPLUS

DN 142:469100

ED Entered STN: 25 Mar 2005

TI Multiphoton excited fabrication of collagen matrixes crosslinked by a modified benzophenone dimer: bioactivity and enzymatic degradation

AU Basu, Swarna; Cunningham, Lawrence P.; Pins, George D.; Bush, Katie A.; Taboada, Rosa; Howell, Amy R.; Wang, Jun; Campagnola, Paul J.

CS Department of Cell Biology and Center for Cellular Analysis and Modeling, University of Connecticut Health Center, Farmington, CT, 06030, USA

SO Biomacromolecules (2005), 6(3), 1465-1474

CODEN: BOMAF6; ISSN: 1525-7797

PB American Chemical Society

DT Journal

LA English

CC 63-7 (Pharmaceuticals)

AB Multiphoton excited (MPE) **photochem.** is used to fabricate model tissue engineering scaffolds directly from types I, II, and IV collagen. A modified benzophenone dimer (BPD) provided the **photoactivation** and becomes incorporated into the resulting collagen matrixes. Unlike xanthene **photochemistries**, the benzophenone dimer can be used in acidic environments, where most forms of collagen have the greatest solubility. The min. feature sizes are investigated by using two- and three-**photon** excitation, where the latter provides for superior "resolution" and suggests that collagen structures can be fabricated on the size scales of focal contacts. The resulting structures displayed excellent retention of bioactivity as evidenced by highly specific cell adhesion as well as immunofluorescence labeling. Structural and chemical aspects of the collagen matrixes were probed through measuring the enzymic degradation through specific and nonspecific proteases, as the resulting relative rates were consistent with the activity of these enzymes. The degradation rates can also be controlled through varying the crosslink d. in the matrixes, which is achieved through tuning the exposure dose during the fabrication process. The degradation rates were also found to be consistent with swelling/shrinking measurements and thus the average mesh size of the matrixes. In all cases the enzymic degrades. were well-fit single exponentials, suggesting that the matrixes can be fabricated with a priori knowledge of their structural properties. These results coupled with the resulting bioactivity suggested that the multiphoton fabrication process may be a powerful tool for the creation of cell-sized tissue engineering scaffolds.

ST multiphoton excitation collagen crosslinked benzophenone dimer tissue engineering scaffold

IT Adhesion, biological

Surface structure  
Swelling, physical  
(bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT Animal tissue  
(engineering; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT Decomposition  
(enzymic; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT Prosthetic materials and Prosthetics  
(implants, scaffolds for tissue engineering; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin)

IT **Photoexcitation**  
(multiphoton; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT Albumins, biological studies  
RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(serum, bovine, crosslinked with benzophenone dimers and collagens; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer as tissue engineering scaffolds)

IT Collagens, biological studies  
RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(type I, crosslinked with benzophenone dimers and bovine serum albumins; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer as tissue engineering scaffolds)

IT Collagens, biological studies  
RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(type II, crosslinked with benzophenone dimers and bovine serum albumins; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer as tissue engineering scaffolds)

IT Collagens, biological studies  
RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(type IV, crosslinked with benzophenone dimers and bovine serum albumins; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer as tissue engineering scaffolds)

IT 9001-12-1, Collagenase 9001-75-6, Pepsin 9002-07-7, Trypsin  
RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT **789485-39-8DP**, crosslinked with collagens and bovine serum albumins  
RL: BSU (Biological study, unclassified); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

IT **789485-39-8D**, derivs.  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(bioactivity and enzymic degradation of multiphoton excited fabrication of

collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)  
IT 112-04-9, Octadecyltrichlorosilane  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(monolayer substrate; bioactivity and enzymic degradation of multiphoton excited fabrication of collagen matrixes crosslinked by modified benzophenone dimer and bovine serum albumin as tissue engineering scaffolds)

RE.CNT 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L9 ANSWER 11 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:75935 CAPLUS

DN 142:146554

ED Entered STN: 28 Jan 2005

TI Method for removal of cured films of positive **photosensitive** compositions without wet treatment for semiconductor device



IN Horii, Makoto; Okaki, Shusaku; Hirano, Takashi  
 PA Sumitomo Bakelite Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 35 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM H01L021-3065  
 ICS C08G069-42; G03F007-42; H01L021-027  
 CC 76-3 (Electric Phenomena)  
 Section cross-reference(s): 38, 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005026394	A2	20050127	JP 2003-189296	20030701
PRAI	JP 2003-189296		20030701		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005026394	ICM	H01L021-3065
	ICS	C08G069-42; G03F007-42; H01L021-027
	IPCI	H01L0021-3065 [ICM,7]; C08G0069-42 [ICS,7]; G03F0007-42 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H096/AA25; 2H096/BA10; 2H096/CA20; 2H096/DA00; 2H096/GA08; 2H096/JA01; 2H096/LA06; 2H096/LA30; 4J001/DA01; 4J001/DB02; 4J001/DC10; 4J001/EB02; 4J001/EB03; 4J001/EB33; 4J001/EB69; 4J001/EC02; 4J001/EC03; 4J001/EC38; 4J001/JA01; 4J001/JA20; 4J001/JB41; 5F004/AA16; 5F004/BD01; 5F004/DA00; 5F004/DA01; 5F004/DA16; 5F004/DA26; 5F004/DB25; 5F004/DB26; 5F004/EA38; 5F046/MA13; 5F046/MA17

AB The process consists of removal of cured films of pos. **photosensitive** compns. containing alkali-soluble polymers and **photosensitive** diazoquinone compds. by dry etching using O gas with degree of removal  $\geq 80\%$  and  $< 100\%$ , and reworking by dry etching using gas mixts. of F-based gases and O gas.

ST dry etching plasma removal pos **photosensitive** film; polyamide film etching oxygen tetrafluorocarbon plasma; hexafluoro aminohydroxyphenyl propane hydroxybenzotriazole diphenyl dicarboxylate polyamide

IT Etching  
 (etchants; method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT Semiconductor device fabrication  
 Semiconductor devices  
 (method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT Etching  
 (plasma, dry; method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (polyamide-, fluorine-containing; method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (polyamide-polyether-; method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT Polyethers, processes  
 RL: IMF (Industrial manufacture); REM (Removal or disposal); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (polybenzoxazole-, fluorine-containing; method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT Fluoropolymers, processes

RL: IMF (Industrial manufacture); REM (Removal or disposal); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (polybenzoxazole-polyether-; method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT Polyamides, preparation  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (polyether-, fluorine-containing; method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT Polybenzoxazoles  
 RL: IMF (Industrial manufacture); REM (Removal or disposal); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (polyether-, fluorine-containing; method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT **Photoimaging materials**  
 (pos.; method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT 75-46-7, Carbon trifluoride 75-73-0 7782-44-7, Oxygen, uses  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (etching gas; method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT 879-15-2D, derivs. 110726-28-8D, 1,2-diazonaphthoquinone derivs.  
 RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)  
 (method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT **112480-82-7P**  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

IT 112480-83-8P 242460-68-0P, Hexafluoro-2,2-bis(3-amino-4-hydroxyphenyl)propane-1-hydroxybenzotriazole diphenyl ether 4,4'-dicarboxylic acid diester copolymer  
 RL: IMF (Industrial manufacture); REM (Removal or disposal); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (method for removal of cured pos. **photosensitive** compns. by two-step dry-etching for semiconductor device)

L9 ANSWER 12 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:33520 CAPLUS

DN 142:123088

ED Entered STN: 14 Jan 2005

TI Naphthoquinonediazidosulfonates for positive-working **photoimaging** compositions for manufacture of semiconductor devices and optical imaging devices

IN Ikeda, Hiroshi; Makabe, Hiroaki; Hirano, Takashi

PA Sumitomo Bakelite Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 52 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07C309-71

ICS C07C309-76; G03F007-004; G03F007-022; G03F007-037; G03F007-075;

H01L021-027

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 25, 38, 76

FAN.CNT 1

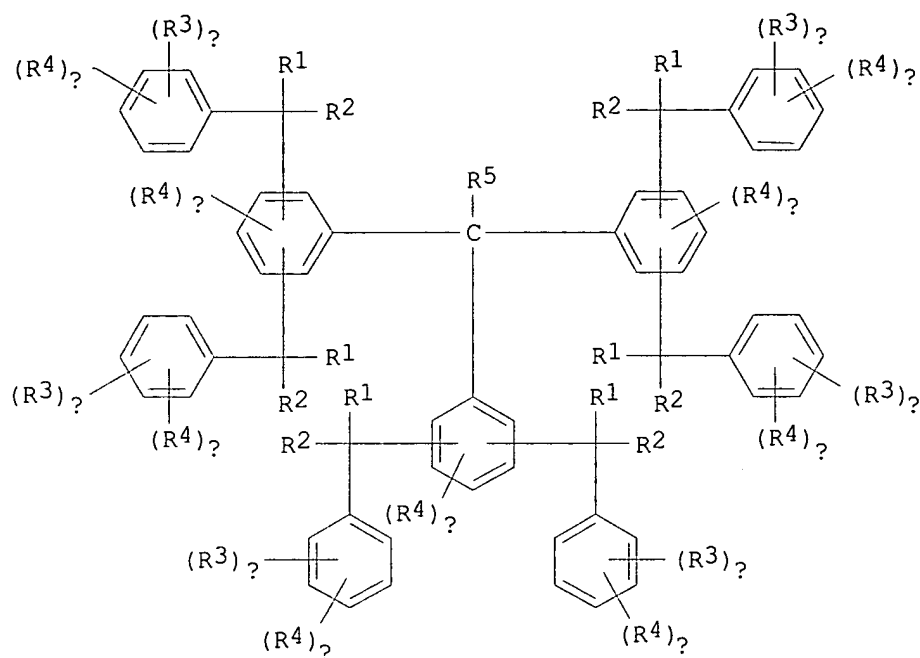
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2005008626	A2	20050113	JP 2004-152391	20040521
PRAI	JP 2003-145452	A	20030522		

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005008626	ICM	C07C309-71
	ICS	C07C309-76; G03F007-004; G03F007-022; G03F007-037; G03F007-075; H01L021-027
	IPCI	C07C0309-71 [ICM, 7]; C07C0309-76 [ICS, 7]; G03F0007-004 [ICS, 7]; G03F0007-022 [ICS, 7]; G03F0007-037 [ICS, 7]; G03F0007-075 [ICS, 7]; H01L0021-027 [ICS, 7]
	FTERM	2H025/AA01; 2H025/AA02; 2H025/AC01; 2H025/AD03; 2H025/BE01; 2H025/CB25; 2H025/CB26; 2H025/CC20; 2H025/FA03; 2H025/FA29; 4H006/AA01; 4H006/AA03; 4H006/AB81

OS MARPAT 142:123088

GI



I

- AB The naphthoquinonediazidosulfonates are 1,2-naphthoquinone-2-diazo-4- or 5-sulfonates of phenols I [R1-R3 = H, C1-8 alkyl, alkoxy, ester; R4 = OH, H, C1-8 alkyl, HOc6.H4CH2;  $\geq 1$  of R4 = OH;  $\alpha, \beta = 0-5$ ;  $\gamma = 0-3$ ;  $0 \leq (\alpha + \beta) \leq 5$ ;  $\beta + \gamma \neq 0$ ]. The comps. contain 100 parts alkali-soluble resins, preferably polyamides, and 1-50 parts of the 1,2-naphthoquinone-2-diazo-4-sulfonates and/or 1,2-naphthoquinone-2-diazo-5-sulfonates of I. The comps. show high **photosensitivity** and produce high-resolution images without scum.
- ST phenyl naphthoquinonediazidosulfonate **photocatalyst** pos **photoimaging** polyamide; semiconductor device fabrication polyamide phenyl naphthoquinonediazidosulfonate **photoimaging**; optical imaging device polyamide phenyl naphthoquinonediazidosulfonate **photoimaging**
- IT Polyamides, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (fluorine-containing; manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** comps. for semiconductor devices and displays)
- IT Optical imaging devices  
 Semiconductor device fabrication

Semiconductor devices  
(manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** compns. for semiconductor devices and displays)

IT **Photoimaging materials**  
(**photopolymerizable**; manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** compns. for semiconductor devices and displays)

IT **Polymerization catalysts**  
(**photopolymn.**; manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** compns. for semiconductor devices and displays)

IT **Polyethers, reactions**  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyamide-, fluorine-containing; manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** compns. for semiconductor devices and displays)

IT **Fluoropolymers, reactions**  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyamide-; manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** compns. for semiconductor devices and displays)

IT **Fluoropolymers, reactions**  
**Polysulfones, reactions**  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyamide-polyether-; manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** compns. for semiconductor devices and displays)

IT **Polyethers, reactions**  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyamide-polysulfone-; manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** compns. for semiconductor devices and displays)

IT **Polyamides, reactions**  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyether-, fluorine-containing; manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** compns. for semiconductor devices and displays)

IT **Polyamides, reactions**  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(polyether-polysulfone-; manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** compns. for semiconductor devices and displays)

IT 819867-54-4P 819867-55-5P 819867-56-6P  
RL: CAT (Catalyst use); DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** compns. for semiconductor devices and displays)

IT 819867-57-7P  
RL: CAT (Catalyst use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(manufacture of naphthoquinonediazidosulfonates for pos.-working **photoimaging** compns. for semiconductor devices and displays)

IT 75-65-0DP, 2-Methyl-2-propanol, reaction products with oxydiphthalic anhydride and hydroxybenzotriazole, polymer with di-Ph ether-dicarboxylic acid hydroxybenzotriazole diester and hexafluorobis(aminohydroxyphenyl)propane 1823-59-2DP, 4,4'-Oxydiphthalic anhydride, esters with methylpropanol and hydroxybenzotriazole, polymer with di-Ph



or more mols. with a photactivatable crosslinker by one-photon or multi-photon excitation, wherein the crosslinker comprises at least two photoactive groups linked by a bridging moiety, and further wherein the point volume of the activation has at least one dimension of less than about 1  $\mu$ . The method is of particular utility for water-soluble mols., particularly biol. active water-soluble mols. for possible use in tissue engineering. An example crosslinker (I) was prepared

ST benzophenone deriv prepn crosslinker **photoactivator**

IT Crosslinking agents

(photochem.; preparation of benzophenone derivative crosslinking **photoactivators**)

IT 789485-39-8P

RL: NUU (Other use, unclassified); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(preparation of benzophenone derivative crosslinking **photoactivators**)

IT 106-38-7, 4-Bromotoluene 462-94-2, 1,5-Pentanediamine 1122-91-4, 4-Bromobenzaldehyde

RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation of benzophenone derivative crosslinking **photoactivators**)

IT 29334-17-6P, 4-Bromophenyl(4-methylphenyl)methanol 51310-29-3P

51310-30-6P 76693-57-7P, 4-Bromo-4'-methylbenzophenone

**478678-66-9P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of benzophenone derivative crosslinking **photoactivators**)

L9 ANSWER 14 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:904438 CAPLUS

DN 141:386382

ED Entered STN: 29 Oct 2004

TI Positive-working **photosensitive** resin composition, manufacture of the pattern, and electronic component

IN Minegishi, Tomonori; Kato, Koji

PA Hitachi Chemical Du Pont Micro System Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 26 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-037

ICS C08G073-06; G03F007-004; G03F007-039; G03F007-075; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 2004302430	A2	20041028	JP 2003-425010	20031222
PRAI	JP 2003-38601	A	20030217		
	JP 2003-71928	A	20030317		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 2004302430	ICM	G03F007-037
	ICS	C08G073-06; G03F007-004; G03F007-039; G03F007-075; H01L021-027
	IPCI	G03F0007-037 [ICM,7]; C08G0073-06 [ICS,7]; G03F0007-004 [ICS,7]; G03F0007-039 [ICS,7]; G03F0007-075 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AB16; 2H025/AC01; 2H025/AD03; 2H025/BE00; 2H025/BE10; 2H025/BG00; 2H025/CC20; 2H025/EA10; 2H025/FA01; 2H025/FA03; 2H025/FA17; 2H025/FA29; 4J043/PA02; 4J043/PB11; 4J043/PB15; 4J043/PB19; 4J043/QB34; 4J043/RA52; 4J043/SA71; 4J043/TA42; 4J043/TA45; 4J043/TA47; 4J043/UA121; 4J043/UA122; 4J043/UA131; 4J043/UA132; 4J043/UB021; 4J043/UB301; 4J043/UB302; 4J043/ZB02

AB Disclosed is the pos.-working **photosensitive** resin composition comprising (A) a polyoxazole precursor having carboxylic acid residue-derived organic group as the terminal group, (B) a **photoacid**

, and (C) a compound having an organic group capable of converting to H upon the acid-catalyzed decomposition Also disclosed is the process involving heat treatment after the development of a film made from the composition Also disclosed is the electronic component having an interlayer insulating film and/or a surface protective film made from the composition

ST pos working **photosensitive** resin compn electronic component

IT polyoxazole precursor; interlayer insulating film; surface protective film

IT Polyethers, preparation  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-, fluorine-containing; pos.-working **photosensitive** resin composition from polyoxazole precursor for electronic component)

IT Fluoropolymers, preparation  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-polyether-; pos.-working **photosensitive** resin composition from polyoxazole precursor for electronic component)

IT Polyethers, preparation  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-, fluorine-containing; pos.-working **photosensitive** resin composition from polyoxazole precursor for electronic component)

IT Fluoropolymers, preparation  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-polyether-; pos.-working **photosensitive** resin composition from polyoxazole precursor for electronic component)

IT Polyamides, preparation

Polybenzoxazoles  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-, fluorine-containing; pos.-working **photosensitive** resin composition from polyoxazole precursor for electronic component)

IT Coating materials

Heat treatment

Photoimaging materials

Photoresists  
(pos.-working **photosensitive** resin composition from polyoxazole precursor for electronic component)

IT 605-54-9 26708-04-3 66003-76-7 95241-37-5 115298-63-0  
137308-86-2 145531-13-1 157057-21-1 663627-01-8 663627-03-0  
782500-21-4 782500-22-5 782500-24-7  
RL: EPR (Engineering process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(pos.-working **photosensitive** resin composition from polyoxazole precursor for electronic component)

IT 2215-89-6, 4,4'-Diphenyl ether dicarboxylic acid  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(pos.-working **photosensitive** resin composition from polyoxazole precursor for electronic component)

IT 110-87-2DP, 3,4-Dihydro-2H-pyran, reaction product with bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-Diphenyl ether dicarboxylic acid chloride copolymer 3188-13-4DP, Chloromethylethyl ether, reaction product with bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-Diphenyl ether dicarboxylic acid chloride copolymer 24979-70-2DP, Maruka Lyncur M, reaction product with 3,4-dihydro-2H-pyran **112480-82-7DP**, reaction product with chloromethylethyl ether 112480-83-8DP, reaction product with chloromethylethyl ether 133440-72-9DP, reaction product with chloromethylethyl ether  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos.-working **photosensitive** resin composition from polyoxazole precursor for electronic component)

L9 ANSWER 15 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:848425 CAPLUS

DN 142:38640

ED Entered STN: 18 Oct 2004

TI An efficient catalyst for low temperature solid-phase cyclization of

AU poly(o-hydroxyamide)  
 CS Toyokawa, Fumihiko; Fukukawa, Ken-ichi; Shibasaki, Yuji; Ueda, Mitsuru  
 Department of Organic and Polymeric Materials, Graduate School of Science  
 and Engineering, Tokyo Institute of Technology, Tokyo, 152-8552, Japan  
 SO Chemistry Letters (2004), 33(10), 1342-1343  
 CODEN: CMLTAG; ISSN: 0366-7022  
 PB Chemical Society of Japan  
 DT Journal  
 LA English  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 OS CASREACT 142:38640  
 AB An efficient acid catalyst for the low-temperature solid-phase cyclization of  
 poly(o-hydroxyamide) (PHA) was found. Thermal cyclization of PHA into  
 poly(benzoxazole) (PBO) proceeded quant. at 250 °C in 10 min in the  
 presence of 10 wt% of a **photoactive** compound, (5-propyl-  
 sulfonyloxymino-5H-thiophen-2-ylidene)-2-(methylphenyl)-acetonitrile  
 (PTMA).  
 ST solid phase cyclization catalyst polyhydroxyamide polybenzoxazole  
 IT Cyclization catalysts  
 (efficient catalyst for low temperature solid-phase cyclization of  
 poly(o-hydroxyamide))  
 IT Polyethers, preparation  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (polyamide-, fluorine-containing; efficient catalyst for low temperature  
 solid-phase cyclization of poly(o-hydroxyamide))  
 IT Fluoropolymers, preparation  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (polyamide-polyether-; efficient catalyst for low temperature solid-phase  
 cyclization of poly(o-hydroxyamide))  
 IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polybenzoxazole-, fluorine-containing; efficient catalyst for low temperature  
 solid-phase cyclization of poly(o-hydroxyamide))  
 IT Fluoropolymers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polybenzoxazole-polyether-; efficient catalyst for low temperature  
 solid-phase cyclization of poly(o-hydroxyamide))  
 IT Polyamides, preparation  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (polyether-, fluorine-containing; efficient catalyst for low temperature  
 solid-phase cyclization of poly(o-hydroxyamide))  
 IT Polybenzoxazoles  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, fluorine-containing; efficient catalyst for low temperature  
 solid-phase cyclization of poly(o-hydroxyamide))  
 IT Cyclization  
 (thermal; efficient catalyst for low temperature solid-phase cyclization of  
 poly(o-hydroxyamide))  
 IT 104-15-4, p-Toluene sulfonic acid, uses 142541-99-9, S-DNQ 282713-83-1  
 RL: CAT (Catalyst use); USES (Uses)  
 (efficient catalyst for low temperature solid-phase cyclization of  
 poly(o-hydroxyamide))  
 IT 7158-32-9 83558-87-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (efficient catalyst for low temperature solid-phase cyclization of  
 poly(o-hydroxyamide))  
 IT **112480-82-7P** 133440-72-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (efficient catalyst for low temperature solid-phase cyclization of  
 poly(o-hydroxyamide))  
 IT 112480-83-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (efficient catalyst for low temperature solid-phase cyclization of  
 poly(o-hydroxyamide))



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L9 ANSWER 16 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:588554 CAPLUS

DN 141:148087

ED Entered STN: 23 Jul 2004

TI Heat-resistant **photosensitive** resin composition, manufacture of relief pattern, and electronic parts

IN Komatsu, Hiroshi

PA Hitachi Chemical Du Pont Micro System Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-037

ICS C08K005-00; C08L079-04; G03F007-022; G03F007-40; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38, 76

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004206032	A2	20040722	JP 2003-11888	20030121
	US 2004142275	A1	20040722	US 2003-701448	20031106
	US 6960420	B2	20051101		
PRAI	JP 2002-322700	A	20021106		
	JP 2003-11888	A	20030121		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004206032	ICM	G03F007-037
	ICS	C08K005-00; C08L079-04; G03F007-022; G03F007-40; H01L021-027
	IPCI	G03F0007-037 [ICM,7]; C08K0005-00 [ICS,7]; C08L0079-04 [ICS,7]; G03F0007-022 [ICS,7]; G03F0007-40 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA10; 2H025/AB16; 2H025/AC01; 2H025/AD03; 2H025/BE01; 2H025/BE07; 2H025/CB26; 2H025/CC03; 2H025/FA03; 2H025/FA17; 2H025/FA29; 2H096/AA25; 2H096/BA10; 2H096/BA20; 2H096/EA02; 2H096/GA08; 2H096/HA01; 2H096/JA04; 4J002/CM021; 4J002/EL066; 4J002/EU026; 4J002/FD157; 4J002/FD206; 4J002/HA05
US 2004142275	IPCI	G03F0007-004 [ICM,7]; G03F0007-30 [ICS,7]; G03C0001-492

[ICS,7]; G03F0007-038 [ICS,7]  
IPCR H05K0001-00 [N,A]; H05K0001-00 [N,C]  
NCL 430/270.100

AB Disclosed is the heat-resistant **photosensitive** resin composition comprising a heat-resistant polymer represented by Z-C(:O)-NH-Y(OR)2-NH[C(:O)-X-C(:O)-NH-Y(RO)2-NH]nC(:O)-Z (X = divalent organic group; Y = tetravalent organic group; Z = cyclic compound free of reactive unsatd. bond; R = H, monovalent organic group; and n = integer 2-500), and a **photo**-reactive compound, and a solvent.

ST heat resistant **photosensitive** resin compn relief pattern electronic parts

IT Electric apparatus  
Photoimaging materials  
Semiconductor devices  
(heat-resistant **photosensitive** resin composition for formation of relief pattern in electronic parts)

IT Polyamides, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(heat-resistant **photosensitive** resin composition for formation of relief pattern in electronic parts)

IT Polyethers, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(polyamide-, fluorine-containing; heat-resistant **photosensitive** resin composition for formation of relief pattern in electronic parts)

IT Fluoropolymers, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(polyamide-polyether-; heat-resistant **photosensitive** resin composition for formation of relief pattern in electronic parts)

IT Polyamides, uses  
RL: NUU (Other use, unclassified); USES (Uses)  
(polyether-, fluorine-containing; heat-resistant **photosensitive** resin composition for formation of relief pattern in electronic parts)

IT **112480-82-7P** 112492-60-1P 143179-02-6P 725744-11-6P  
725744-12-7P 725744-13-8P 725744-14-9P  
RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP (Preparation); USES (Uses)  
(heat-resistant **photosensitive** resin composition for formation of relief pattern in electronic parts)

L9 ANSWER 17 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2004:495602 CAPLUS  
DN 141:44846  
ED Entered STN: 18 Jun 2004  
TI Positive-working **photosensitive** resin composition, relief pattern formation, and electronic device  
IN Kawasaki, Hiroshi  
PA Hitachi Chemical Du Pont Micro System Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 13 pp.  
CODEN: JKXXAF

DT Patent  
LA Japanese  
IC ICM G03F007-037  
ICS C08G073-22; G03F007-039; G03F007-075; G03F007-38; G03F007-40; H01L021-027; H01L021-312  
CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004170611	A2	20040617	JP 2002-335174	20021119
PRAI	JP 2002-335174		20021119		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004170611	ICM	G03F007-037
	ICS	C08G073-22; G03F007-039; G03F007-075; G03F007-38; G03F007-40; H01L021-027; H01L021-312
	IPCI	G03F0007-037 [ICM,7]; C08G0073-22 [ICS,7]; G03F0007-039

[ICS,7]; G03F0007-075 [ICS,7]; G03F0007-38 [ICS,7];  
G03F0007-40 [ICS,7]; H01L0021-027 [ICS,7]; H01L0021-312  
[ICS,7]

FTERM 2H025/AA04; 2H025/AA07; 2H025/AA10; 2H025/AA14;  
2H025/AB16; 2H025/AC08; 2H025/AD03; 2H025/BE00;  
2H025/BE10; 2H025/BG00; 2H025/CB26; 2H025/CB45;  
2H025/CC03; 2H025/CC06; 2H025/CC20; 2H025/FA12;  
2H096/AA25; 2H096/BA11; 2H096/EA05; 2H096/GA08;  
4J043/PA02; 4J043/PA19; 4J043/QB34; 4J043/RA52;  
4J043/SA06; 4J043/SA71; 4J043/SB01; 4J043/TA12;  
4J043/TB01; 4J043/UA022; 4J043/UA032; 4J043/UA042;  
4J043/UA121; 4J043/UA122; 4J043/UA131; 4J043/UA132;  
4J043/UA141; 4J043/UA142; 4J043/UA262; 4J043/UA762;  
4J043/UB011; 4J043/UB021; 4J043/UB022; 4J043/UB061;  
4J043/UB062; 4J043/UB122; 4J043/UB301; 4J043/UB302;  
4J043/UB312; 4J043/UB401; 4J043/UB402; 4J043/VA042;  
4J043/XA16; 4J043/XA19; 4J043/ZB22; 5F058/AA08;  
5F058/AB10; 5F058/AC07; 5F058/AD08; 5F058/AF04;  
5F058/AG01; 5F058/AH02; 5F058/AH03

AB The composition contains (A) polybenzoxazole precursor [COR1CONHR2(OH)2NH] [R1 = divalent organic group with 1 or 2-3 aromatic ring(s) linked through ether, 2,2-hexafluoropropylene, 2,2-propylene, sulfone, methylene or carbonyl bond; R2 = tetravalent group with 1 or 2-3 aromatic ring(s) linked through ether, 2,2-hexafluoropropylene, 2,2-propylene, sulfone, methylene bond] (B) a compd.generating an acid by the action of actinic ray, (C) a compound having acid-decomposable group, which decomp. by the action of an acid catalyst and its solubility in aqueous alkaline solution increases, (D) a silane coupling agent, and (E) a solvent. Relief pattern is formed by the steps of coating the **photosensitive** composition on a support and drying, exposing, pre-heating, developing, and post-heating. In the electronic device having an intermediate insulating layer and a surface protective layer,  $\geq 1$  of the layer is the above patterned layer. The composition shows good adhesion with the substrate, storage stability, heat resistance and gives clear relief patterns.

ST **photosensitive** compn polybenzoxazole acid generator; alkali decomposable compd silane coupling agent **photosensitive** compn; relief pattern electronic device **photosensitive** resin compn

IT Coupling agents  
Dielectric films

Photoimaging materials  
Semiconductor device fabrication

(**photosensitive** composition containing polybenzoxazole precursor for relief pattern and insulating film formation)

IT Polybenzoxazoles

RL: TEM (Technical or engineered material use); USES (Uses)

(**photosensitive** composition containing polybenzoxazole precursor for relief pattern and insulating film formation)

IT 7538-44-5, Bis(2-hydroxyethyl)-3-aminopropyltriethoxysilane

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(SIB 1140.0; **photosensitive** composition containing polybenzoxazole precursor for relief pattern and insulating film formation)

IT 23779-32-0, SIU 9055.0

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(SIU 9055.0; **photosensitive** composition containing polybenzoxazole precursor for relief pattern and insulating film formation)

IT 83697-56-7, NAI 106 85342-62-7, NAI 105 137308-86-2, Diphenyliodonium 9,10-dimethoxyanthracene-2-sulfonate

RL: TEM (Technical or engineered material use); USES (Uses)

(acid generator; **photosensitive** composition containing polybenzoxazole precursor for relief pattern and insulating film formation)

IT 2215-89-6, 4,4'-Diphenylether dicarboxylic acid

RL: RCT (Reactant); RACT (Reactant or reagent)  
(chlorination of)

IT 110-87-2DP, 3,4-Dihydro-2H-pyran, ethers polyvinylphenol 24979-70-2DP, Maruka Lyncur M, ethers with dihydropyran 112480-82-7P  
133440-72-9P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenylether dicarboxylic acid chloride copolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (photosensitive composition containing polybenzoxazole precursor for relief pattern and insulating film formation)

IT 7158-32-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation and polymerization of)

IT 96-48-0,  $\gamma$ -Butyrolactone  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (solvent; photosensitive composition containing polybenzoxazole precursor for relief pattern and insulating film formation)

L9 ANSWER 18 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:351939 CAPLUS  
 DN 140:384460  
 ED Entered STN: 30 Apr 2004  
 TI Positive-working photosensitive polymer compositions giving high-resolution patterns for semiconductor devices  
 IN Makabe, Hiroaki; Banba, Toshio; Hirano, Takashi  
 PA Sumitomo Bakelite Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 36 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03F007-037  
 ICS C08G069-26; C08G069-42; G03F007-004; G03F007-022; G03F007-075; H01L021-027  
 CC 76-3 (Electric Phenomena)  
 Section cross-reference(s): 38, 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004132996	A2	20040430	JP 2002-265237	20020911
PRAI	JP 2001-382741	A	20011217		
	JP 2002-234801	A	20020812		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004132996	ICM	G03F007-037
	ICS	C08G069-26; C08G069-42; G03F007-004; G03F007-022; G03F007-075; H01L021-027
	IPCI	G03F0007-037 [ICM,7]; C08G0069-26 [ICS,7]; C08G0069-42 [ICS,7]; G03F0007-004 [ICS,7]; G03F0007-022 [ICS,7]; G03F0007-075 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA01; 2H025/AA02; 2H025/AC01; 2H025/AD03; 2H025/BC68; 2H025/BC69; 2H025/BC70; 2H025/BE01; 2H025/CB25; 2H025/CB26; 2H025/CC20; 2H025/FA03; 2H025/FA17; 4J001/DA01; 4J001/DB01; 4J001/DB02; 4J001/DC05; 4J001/DC08; 4J001/DC10; 4J001/DC16; 4J001/DD02; 4J001/DD07; 4J001/EB36; 4J001/EB37; 4J001/EB44; 4J001/EB57; 4J001/EC38; 4J001/EC66; 4J001/EC67; 4J001/EC70; 4J001/FB03; 4J001/FC03; 4J001/GA13; 4J001/JA20; 4J001/JB18

OS MARPAT 140:384460

AB The compns. comprise (A) 100 parts polyamides [NHX(R1)mNHCOY(R2)nCO]a[NHZNHCOY(R2)nCO]b [X = cyclic compound group with valence 2-4; Y = cyclic compound group with valence 2-6; Z = R4Si(R6)(R7)OSi(R6)(R7)R5; R1 = OH, OR3; R2 = OH, CO2H, OR3, CO2R3;  $\geq 1$  of R1 = OH or  $\geq 1$  of R2 = CO2H; R3 = Cl-15 organic group; R4, R5 = divalent organic group; R6, R7 = monovalent organic group; m = 0-2; n = 0-4; a = 60-100 mol%; b = 0-40 mol%], (B) 1-50 parts photosensitive diazoquinone compds., and (C) 1-30 parts phenol compds. R9C[C6H5-p-q(OH)p(R8)q]3 (R8 = halo, alkyl, alkoxy, cycloalkyl; R9 = H, alkyl, alkoxy, cycloalkyl, aryl; p = 2, 3; q = 0-3). The semiconductor devices are manufactured by applying the compns. on semiconductor wafers satisfying cured thickness 0.1-30 $\mu$ m, prebaking, exposure, development, and heating.

ST pos photoimaging polymer semiconductor device diazoquinone phenol; diphenylcarboxylic ether oxydipthalic fluoro

aminohydroxyphenylpropane polymer norbornenedicarboxylic  
IT Polybenzoxazoles  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluorine-containing, crosslinked; pos.-working **photosensitive**  
polymer compns. giving high-resolution patterns for semiconductor devices)

IT Polyamides, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluorine-containing; pos.-working **photosensitive** polymer compns.  
giving high-resolution patterns for semiconductor devices)

IT Polyethers, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-, fluorine-containing; pos.-working **photosensitive**  
polymer compns. giving high-resolution patterns for semiconductor devices)

IT Fluoropolymers, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-; pos.-working **photosensitive** polymer compns.  
giving high-resolution patterns for semiconductor devices)

IT Fluoropolymers, uses  
Polysulfones, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-polyether-; pos.-working **photosensitive** polymer  
compns. giving high-resolution patterns for semiconductor devices)

IT Polyethers, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-polysulfone-; pos.-working **photosensitive** polymer  
compns. giving high-resolution patterns for semiconductor devices)

IT Fluoropolymers, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-, crosslinked; pos.-working **photosensitive**  
polymer compns. giving high-resolution patterns for semiconductor devices)

IT Polysulfones, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-polyether-, crosslinked; pos.-working  
**photosensitive** polymer compns. giving high-resolution patterns for  
semiconductor devices)

IT Polyimides, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-polyether-, fluorine-containing, crosslinked; pos.-working  
**photosensitive** polymer compns. giving high-resolution patterns for  
semiconductor devices)

IT Fluoropolymers, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-polyether-polyimide-, crosslinked; pos.-working  
**photosensitive** polymer compns. giving high-resolution patterns for  
semiconductor devices)

IT Polyethers, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-polyimide-, fluorine-containing, crosslinked; pos.-working  
**photosensitive** polymer compns. giving high-resolution patterns for  
semiconductor devices)

IT Polyethers, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-polysulfone-, crosslinked; pos.-working  
**photosensitive** polymer compns. giving high-resolution patterns for  
semiconductor devices)

IT Polyamides, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing; pos.-working **photosensitive**  
 polymer compns. giving high-resolution patterns for semiconductor devices)

IT Polybenzoxazoles  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polyimide-, fluorine-containing, crosslinked; pos.-working  
**photosensitive** polymer compns. giving high-resolution patterns for  
 semiconductor devices)

IT Polybenzoxazoles  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polysulfone-, crosslinked; pos.-working  
**photosensitive** polymer compns. giving high-resolution patterns for  
 semiconductor devices)

IT Polyamides, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polysulfone-, pos.-working **photosensitive** polymer  
 compns. giving high-resolution patterns for semiconductor devices)

IT Semiconductor devices  
 (pos.-working **photosensitive** polymer compns. giving  
 high-resolution patterns for semiconductor devices)

IT **Photoimaging** materials  
 (pos.; pos.-working **photosensitive** polymer compns. giving  
 high-resolution patterns for semiconductor devices)

IT 110726-34-6D, esters with 1,2-naphthoquinone-2-diazido-5-sulfonic acid  
 RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES  
 (Uses)  
 (photoacid generator; epos.-working **photosensitive**  
 polymer compns. giving high-resolution patterns for semiconductor devices)

IT 20546-03-6D, 1,2-Naphthoquinone-2-diazido-5-sulfonic acid, esters with  
 phenol compds. 20680-48-2D, esters with phenol compds. 110726-28-8D,  
 1-[.α.-Methyl-.α.-(4-hydroxyphenyl)ethyl]-4-  
 [.α.,.α.-bis(4-hydroxyphenyl)ethyl]benzene, esters with  
 1,2-naphthoquinone-2-diazido-5-sulfonic acid  
 RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES  
 (Uses)  
 (photoacid generator; pos.-working **photosensitive**  
 polymer compns. giving high-resolution patterns for semiconductor devices)

IT 826-62-0DP, 5-Norbornene-2,3-dicarboxylic anhydride, reaction products  
 with polyamides 242460-72-6DP, terminated with 5-norbornene-2,3-  
 dicarboxylic anhydride **683774-90-5DP**, terminated with  
 5-norbornene-2,3-dicarboxylic anhydride 683789-64-2DP, terminated with  
 5-norbornene-2,3-dicarboxylic anhydride  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (pos.-working **photosensitive** polymer compns. giving  
 high-resolution patterns for semiconductor devices)

IT 683789-61-9 683789-63-1  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material  
 use); USES (Uses)  
 (sensitizer; pos.-working **photosensitive** polymer compns.  
 giving high-resolution patterns for semiconductor devices)

L9 ANSWER 19 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:351938 CAPLUS

DN 140:384459

ED Entered STN: 30 Apr 2004

TI Low temperature-curable positive-working **photosensitive** polymer  
 compositions for semiconductor devices

IN Banba, Toshio; Imamura, Takeshi; Hirano, Takashi

PA Sumitomo Bakelite Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 32 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-037

ICS G03F007-022; H01L021-027

CC 76-3 (Electric Phenomena)  
Section cross-reference(s): 38, 74

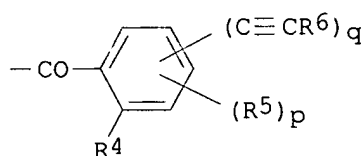
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004132994	A2	20040430	JP 2002-252566	20020830
PRAI	JP 2002-234345	A	20020812		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004132994	ICM	G03F007-037
	ICS	G03F007-022; H01L021-027
	IPCI	G03F0007-037 [ICM,7]; G03F0007-022 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AB16; 2H025/AC01; 2H025/AD03; 2H025/BE01; 2H025/CB25; 2H025/CB26; 2H025/FA03; 2H025/FA17; 2H025/FA29

GI



I

AB The compns. comprise (A) polyamides Z[NHX(R1)<sub>m</sub>NHCOY(R2)<sub>n</sub>CO]<sub>a</sub>NHX(R1)<sub>m</sub>NHZ (X = cyclic compound group with valence 2-4; Y = cyclic compound group with valence 2-6; Z = I; R1 = OH, OR3; R2 = OH, CO2H, OR3, CO2R3; ≥1 of R1 = OH or ≥1 of R2 = CO2H; R3 = C1-15 organic group; R4 = H, CO2H, OH, OR3, CO2R3, alkyl; R5 = OH, C1-10 organic group; R6 = H, aryl; m = 0-2; n = 0-4; p = 0, 1; q = 1, 2) and (B) **photoacid** generators. The semiconductor devices are manufactured by applying the compns. on semiconductor wafers satisfying cured thickness 0.1-30μm, prebaking, exposure, development, and heating.

ST pos **photoimaging** polymer semiconductor device **photoacid** generator; dicarboxydiphenyl ether fluoro aminohydroxyphenylpropane polymer ethenylphthalic **photoimaging**

IT Polybenzoxazoles

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (fluorine-containing, crosslinked; low temperature-curable pos.-working **photosensitive** polymer compns. for semiconductor devices)

IT Polyamides, uses

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (fluorine-containing; low temperature-curable pos.-working **photosensitive** polymer compns. for semiconductor devices)

IT Semiconductor devices

(low temperature-curable pos.-working **photosensitive** polymer compns. for semiconductor devices)

IT Polyethers, uses

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyamide-, fluorine-containing; low temperature-curable pos.-working **photosensitive** polymer compns. for semiconductor devices)

IT Fluoropolymers, uses

RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (polyamide-; low temperature-curable pos.-working **photosensitive** polymer compns. for semiconductor devices)

IT Fluoropolymers, uses

RL: DEV (Device component use); IMF (Industrial manufacture); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyether-; low temperature-curable pos.-working  
**photosensitive** polymer compns. for semiconductor devices)

IT Fluoropolymers, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-, crosslinked; low temperature-curable pos.-working  
**photosensitive** polymer compns. for semiconductor devices)

IT Polyethers, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-, fluorine-containing, crosslinked; low temperature-curable  
 pos.-working **photosensitive** polymer compns. for semiconductor  
 devices)

IT Fluoropolymers, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-, crosslinked; low temperature-curable  
 pos.-working **photosensitive** polymer compns. for semiconductor  
 devices)

IT Polyimides, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-, fluorine-containing, crosslinked; low  
 temperature-curable pos.-working **photosensitive** polymer compns. for  
 semiconductor devices)

IT Fluoropolymers, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-polyimide-, crosslinked; low temperature-curable  
 pos.-working **photosensitive** polymer compns. for semiconductor  
 devices)

IT Polyethers, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyimide-, fluorine-containing, crosslinked; low  
 temperature-curable pos.-working **photosensitive** polymer compns. for  
 semiconductor devices)

IT Polybenzoxazoles  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing, crosslinked; low temperature-curable  
 pos.-working **photosensitive** polymer compns. for semiconductor  
 devices)

IT Polyamides, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing; low temperature-curable pos.-working  
**photosensitive** polymer compns. for semiconductor devices)

IT Polybenzoxazoles  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polyimide-, fluorine-containing, crosslinked; low temperature-curable  
 pos.-working **photosensitive** polymer compns. for semiconductor  
 devices)

IT **Photoimaging** materials  
 (pos.; low temperature-curable pos.-working **photosensitive** polymer  
 compns. for semiconductor devices)

IT 62480-31-3DP, 4-Ethynylbenzoyl chloride, reaction products with polyamides  
 73819-76-8DP, 4-Ethynylphthalic anhydride, reaction products with  
 polyamides **112480-82-7DP**, terminated with ethynyl-containing  
 phthalic anhydride 223255-22-9DP, terminated with 4-ethynylphthalic  
 anhydride 242460-68-0DP, terminated with ethynyl-containing phthalic  
 anhydride 242460-72-6DP, terminated with 4-ethynylbenzoyl chloride  
 650609-55-5DP, reaction products with polyamides **683774-90-5DP**,  
 terminated with 4-ethynylphthalic anhydride 683774-93-8DP, terminated  
 with 4-ethynylbenzoyl chloride  
 RL: DEV (Device component use); IMF (Industrial manufacture); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)



(low temperature-curable pos.-working **photosensitive** polymer compns. for semiconductor devices)

IT 20546-03-6D, 1,2-Naphthoquinone-2-diazido-5-sulfonic acid, esters with phenol compds. 20680-48-2D, esters with phenol compds. 110726-28-8D, 1-[.α.-Methyl-.α.-(4-hydroxyphenyl)ethyl]-4-[.α.,.α.-bis(4-hydroxyphenyl)ethyl]benzene, esters with 1,2-naphthoquinone-2-diazido-5-sulfonic acid 683774-95-0

RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)

(**photoacid** generator; low temperature-curable pos.-working **photosensitive** polymer compns. for semiconductor devices)

L9 ANSWER 20 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:330745 CAPLUS

DN 140:365651

ED Entered STN: 23 Apr 2004

TI Naphthoquinone diazido sulfonate esters, positive-working **photoresist** compositions and semiconductor devices

IN Banba, Toshio; Makabe, Hiroaki; Hirano, Takashi

PA Sumitomo Bakelite Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 44 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-022

ICS C08G069-36; C08G069-42; G03F007-037; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004125814	A2	20040422	JP 2002-246796	20020827
PRAI	JP 2002-223235	A	20020731		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004125814	ICM	G03F007-022
	ICS	C08G069-36; C08G069-42; G03F007-037; H01L021-027
	IPCI	G03F0007-022 [ICM,7]; C08G0069-36 [ICS,7]; C08G0069-42 [ICS,7]; G03F0007-037 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA01; 2H025/AA02; 2H025/AB16; 2H025/AC01; 2H025/AD03; 2H025/BE01; 2H025/CB23; 2H025/CB25; 2H025/CB26; 2H025/CB32; 2H025/CB43; 2H025/CB45; 2H025/FA17; 4J001/DA01; 4J001/DB02; 4J001/DC10; 4J001/EB28; 4J001/EB33; 4J001/EB34; 4J001/EB44; 4J001/EB56; 4J001/EB57; 4J001/EB58; 4J001/EB60; 4J001/EC38; 4J001/EC44; 4J001/EC65; 4J001/EC66; 4J001/EC67; 4J001/EC68; 4J001/EC70; 4J001/JA07

AB Noble esters of 2,2-bis[4,4-di(3-hydroxy-4-methylphenyl)cyclohexyl]propane with 1,2-naphthoquinone-2-diazido-5-sulfonic acid or 1,2-naphthoquinone-2-diazido-4-sulfonic acid are disclosed. The disclosed **photoresist** composition comprises an alkali-soluble resin 100 and the above ester 1-50 parts. Semiconductor devices fabricated by using the **photoresist** compns. are also disclosed. The resist composition has high sensitivity and high resolution even when relatively thick resist layer is used.

ST naphthoquinone diazide sulfonate ester **photoresist**

IT Positive **photoresists**

(naphthoquinone diazidosulfonate esters as sensitizers for)

IT Polyethers, preparation

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyamide-, fluorine-containing; pos.-working **photoresist** compns. containing)

IT Fluoropolymers, preparation

Polysulfones, preparation

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyamide-polyether-; pos.-working **photoresist** compns. containing)

IT Polyethers, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polysulfone-; pos.-working **photoresist** compns. containing)

IT Polyamides, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing; pos.-working **photoresist** compns. containing)

IT Polyamides, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polysulfone-; pos.-working **photoresist** compns. containing)

IT Polyamides, preparation  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (pos.-working **photoresist** compns. containing)

IT 1823-59-2DP, 4,4'-Oxydiphthalic dianhydride, esters with tert-Bu alc. and 1-hydroxy-1,2,3-benzotriazole, polymer with di(1,2,3-benzotriazol-1-yl) di-Ph ether-4,4-dicarboxylate and hexafluoro-2,2-bis(3-amino-4-hydroxyphenyl)propane 56793-42-1P **112480-82-7P** 242460-68-0P 242460-72-6DP, reaction products with 5-norbornene-2,3-dicarboxylic anhydride 242460-73-7P 681171-24-4P  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (pos.-working **photoresist** compns. containing)

IT 155123-67-4P 474937-71-8P 681214-47-1P, 2,2-Bis[4,4-di(3-hydroxy-4-methylphenyl)cyclohexyl]propane 1,2-naphthoquinone-2-diazidosulfonate 681214-48-2P, 2,2-Bis[4,4-di(4-hydroxy-3-methylphenyl)cyclohexyl]propane tris(1,2-naphthoquinone-2-diazido-4-sulfonate) 681214-49-3P, 2,2-Bis[4,4-di(4-hydroxy-3-methylphenyl)cyclohexyl]propane tetrakis(1,2-naphthoquinone-2-diazido-4-sulfonate)  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (sensitizer for pos.-working **photoresist** compns.)

L9 ANSWER 21 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:330423 CAPLUS

DN 140:365650

ED Entered STN: 23 Apr 2004

TI Heat-resistant resin precursor compositions

IN Yumiba, Tomoyuki; Fujita, Yoji; Suwa, Atsushi

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 32 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L079-04

ICS C08K005-28; C08K005-544; C08L083-08

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004124054	A2	20040422	JP 2003-159032	20030604
PRAI	JP 2002-166714	A	20020607		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004124054	ICM	C08L079-04
	ICS	C08K005-28; C08K005-544; C08L083-08
	IPCI	C08L0079-04 [ICM,7]; C08K0005-28 [ICS,7]; C08K0005-544 [ICS,7]; C08L0083-08 [ICS,7]
	FTERM	4J002/CM02W; 4J002/CM021; 4J002/CM04W; 4J002/CM041; 4J002/CP09X; 4J002/EQ017; 4J002/EQ037; 4J002/ES007; 4J002/EV287; 4J002/EX076; 4J002/GH00; 4J002/GQ01;

- AB Title compns. comprise (A) polymers containing mainly repeating units [COR1(OH)p(COOR3)nCONHR2(OH)q(COOR4)oNH]m, (B) silicone compds. (NR5R6)aAr(R7)b(SiR8R9O)cSiR10R11R12, and/or (C) silicone compds. (R13R14N)dAr(R15)e(SiR16R17O)fSiR18R19Ar(R20)g(NR12R22)h, wherein R1, R2 = divalent - octavalent organic group containing C<sub>≥2</sub>; R3, R4 = H, alkali metal ion, ammonium ion, or C1-20 organic group; R5, R6, R13, R14, R21, R22 = H, C1-4 organic group; R7, R15, R20 = C1-6 organic group; R8, R9, R10, R11, R12, R16, R17, R18, R19 = C1-6 hydrocarbon or alkoxy, or Ph (≥1 of R8, R9, R10, R11, R12 and R16, R17, R18, R19 is C1-6 alkoxy); Ar = aromatic ring containing C<sub>≥2</sub> or aromatic heterocycle structure; m = 3-100,000; n, o = 0-2 integer; p, q = 0-4 integer (n + q > 0); a, d, f, h = ≥1 integer; and b, c, e, g = ≥ 0 integer (1 ≤ a + b ≤ 4, 1 ≤ d + e ≤ 4, 1 ≤ g + h ≤ 4). Thus, 4,4'-diaminodiphenyl ether 19.0, 1,3-bis(3-aminopropyl)tetramethyldisiloxane 1.2, and 3,3',4,4'-diphenyl ether tetracarboxylic dianhydride 30.1 g were reacted, 23.8 g dimethylforamidodimethylacetal was added therein and reacted to give a polymer, 30 g of which was dissolved in 100 g γ-butyrolactone, 3% m-aminophenyltrimethoxysilane was added therein, applied on a silicon wafer, and baked, showing good adhesion and pattern processability.
- ST heat resistant resin precursor compn **photoresist**;  
diaminodiphenyl ether bisaminopropyltetramethyldisiloxane diphenyl ether tetracarboxylic dianhydride copolymer **photoresist**
- IT Polyimides, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-polyether-, polysiloxane-; heat-resistant resin precursor compns.)
- IT Polyethers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-polyimide-, polysiloxane-; heat-resistant resin precursor compns.)
- IT Polyamides, reactions  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (fluorine-containing, precursor for polybenzoxazoles; heat-resistant resin precursor compns.)
- IT Polybenzoxazoles  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (fluorine-containing; heat-resistant resin precursor compns.)
- IT Adhesion promoters  
Heat-resistant materials  
Negative **photoresists**  
Photoimaging materials  
Positive **photoresists** (heat-resistant resin precursor compns.)
- IT Polyethers, reactions  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (polyamic acid-polyamide-, precursors; heat-resistant resin precursor compns.)
- IT Polyamides, reactions  
Polysiloxanes, reactions  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (polyamic acid-polyether-, precursors; heat-resistant resin precursor compns.)
- IT Polyethers, reactions  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (polyamic acid-siloxane-, precursors; heat-resistant resin precursor compns.)
- IT Polyethers, reactions  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (polyamide-, fluorine-containing, polybenzoxazole precursors;

heat-resistant resin precursor compns.)

IT Fluoropolymers, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (polyamide-, precursor for polybenzoxazoles; heat-resistant resin precursor compns.)

IT Polyamic acids  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (polyamide-polyether-, precursors; heat-resistant resin precursor compns.)

IT Polyimides, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyether-; heat-resistant resin precursor compns.)

IT Polysiloxanes, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyether-polyimide-, acrylic-; heat-resistant resin precursor compns.)

IT Polyimides, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyether-polysiloxane-, acrylic-; heat-resistant resin precursor compns.)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyimide-; heat-resistant resin precursor compns.)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyimide-polysiloxane-, acrylic-; heat-resistant resin precursor compns.)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-, fluorine-containing; heat-resistant resin precursor compns.)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-; heat-resistant resin precursor compns.)

IT Polyimides, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-, fluorine-containing; heat-resistant resin precursor compns.)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-; heat-resistant resin precursor compns.)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-polyimide-; heat-resistant resin precursor compns.)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyimide-, fluorine-containing; heat-resistant resin precursor compns.)

IT Polyamides, reactions  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (polyether-, fluorine-containing, polybenzoxazole precursors; heat-resistant resin precursor compns.)

IT Polybenzoxazoles  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-, fluorine-containing; heat-resistant resin precursor compns.)

IT Polybenzoxazoles  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-polyimide-, fluorine-containing; heat-resistant resin precursor compns.)

IT Polyamides, preparation  
Polysiloxanes, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-polyimide-; heat-resistant resin precursor compns.)

IT Polyamides, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-polyimide-polysiloxane-, acrylic-; heat-resistant resin precursor compns.)

IT Polyamic acids  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(polyether-polysiloxane-, precursors; heat-resistant resin precursor compns.)

IT Polyimides, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-siloxane-; heat-resistant resin precursor compns.)

IT Polyethers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyimide-siloxane-; heat-resistant resin precursor compns.)

IT 681437-66-1P  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); RCT  
(Reactant); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(adhesion promoter, optionally reactant in adhesion promoter preparation; heat-resistant resin precursor compns.)

IT 681437-67-2P  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP  
(Preparation); USES (Uses)  
(adhesion promoter; heat-resistant resin precursor compns.)

IT 7003-80-7 33976-43-1, p-Aminophenyltrimethoxysilane 70411-42-6,  
m-Aminophenyltrimethoxysilane 681248-96-4 681248-97-5  
RL: MOA (Modifier or additive use); USES (Uses)  
(adhesion promoter; heat-resistant resin precursor compns.)

IT 591-27-5DP, 3-Aminophenol, reaction products with polyimides  
112480-78-1P 112480-83-8P 681248-92-0P 681248-93-1P 681248-99-7P  
681249-00-3P  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(heat-resistant resin precursor compns.)

IT 220426-92-6P, Benzamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[3-amino-223255-30-9P, 5-Isobenzofurancarboxamide, N,N'-[[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]bis(6-hydroxy-3,1-phenylene)]bis[1,3-dihydro-1,3-dioxo-  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(monomer; heat-resistant resin precursor compns.)

IT 652968-57-5P  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(optionally precursor for polybenzoxazole-polyimide; heat-resistant resin precursor compns.)

IT 133440-72-9P 261373-47-1P  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); RCT  
(Reactant); TEM (Technical or engineered material use); PREP  
(Preparation); RACT (Reactant or reagent); USES (Uses)  
(optionally precursor for polybenzoxazole; heat-resistant resin precursor compns.)

IT 151402-72-1DP, 1,3-Bis(3-aminopropyl)tetramethyldisiloxane-4,4'-

diaminodiphenyl ether-3,3',4,4'-diphenyl ether tetracarboxylic dianhydride  
 copolymer, reaction products with aminophenol 232258-55-8P,  
 3,5-Diaminobenzoic acid-4,4'-diaminodiphenyl ether-3,3',4,4'-diphenyl  
 ether tetracarboxylic acid dibutyl ester dichloride copolymer  
 261373-47-1DP, reaction products with aminophenol  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); RCT  
 (Reactant); TEM (Technical or engineered material use); PREP  
 (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (optionally precursor; heat-resistant resin precursor compns.)  
 IT 261373-55-1DP, reaction products with aminophenol  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (optionally precursor; heat-resistant resin precursor compns.)  
 IT 681435-16-5P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (polyamic acid ester, precursor; heat-resistant resin precursor  
 compns.)  
 IT 151402-72-1P, 1,3-Bis(3-aminopropyl)tetramethyldisiloxane-4,4'-  
 diaminodiphenyl ether-3,3',4,4'-diphenyl ether tetracarboxylic dianhydride  
 copolymer  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyimide; heat-resistant resin precursor compns.)  
 IT 656798-61-7P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (precursor for polybenzoxazole-polyimide; heat-resistant resin  
 precursor compns.)  
 IT 112480-82-7P 261503-24-6P 681248-95-3P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (precursor for polybenzoxazole; heat-resistant resin precursor compns.)  
 IT 261503-24-6DP, reaction products with aminophenol  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (precursor; heat-resistant resin precursor compns.)  
 IT 108-24-7, Acetic anhydride 34390-22-2, Aminophenyltrimethoxysilane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant in adhesion promoter preparation; heat-resistant resin precursor  
 compns.)  
 IT 121-90-4, 3-Nitrobenzoyl chloride 1204-28-0, Trimellitic anhydride  
 chloride 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant in monomer preparation; heat-resistant resin precursor compns.)

L9 ANSWER 22 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:305566 CAPLUS  
 DN 140:347495  
 ED Entered STN: 15 Apr 2004  
 TI Positive-working heat-resistant **photosensitive** resin  
 composition, patterning method, and electronic parts  
 IN Minegishi, Tomonori  
 PA Hitachi Chemical Du Pont Micro System Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 17 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM G03F007-039  
 ICS G03F007-037; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 FAN.CNT 1  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004117709	A2	20040415	JP 2002-279522	20020925
PRAI JP 2002-279522		20020925		

CLASS  
 PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

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JP 2004117709  ICM    G03F007-039
                  ICS    G03F007-037; H01L021-027
                  IPCI   G03F0007-039 [ICM,7]; G03F0007-037 [ICS,7];
                        H01L0021-027 [ICS,7]
                  FTERM  2H025/AA10; 2H025/AB17; 2H025/AC01; 2H025/AD03;
                        2H025/BE00; 2H025/BE07; 2H025/BE10; 2H025/CB21;
                        2H025/CB25; 2H025/CB26; 2H025/CC20; 2H025/FA03;
                        2H025/FA12; 2H025/FA17
AB  Title resin composition comprises (A) polymers containing phenolic hydroxy group or
    carboxyl group, (B) an actinic ray-sensitive acid generator, and (C) a
    carboxylic acid precursor which converts to acid upon the action of an
    acid catalyst.
ST  pos heat resistant photosensitive polymer patterning electronic
    device
IT  Polysulfones, uses
    RL: POF (Polymer in formulation); TEM (Technical or engineered material
    use); USES (Uses)
        (polyamic acid-polyether-; pos.-working heat-resistant
        photosensitive resin composition for patterning in manufacture of
        electronic parts)
IT  Polyethers, uses
    RL: POF (Polymer in formulation); TEM (Technical or engineered material
    use); USES (Uses)
        (polyamic acid-polysulfone-; pos.-working heat-resistant
        photosensitive resin composition for patterning in manufacture of
        electronic parts)
IT  Polyethers, uses
    RL: POF (Polymer in formulation); TEM (Technical or engineered material
    use); USES (Uses)
        (polyamide-, fluorine- and hydroxy-containing; pos.-working heat-resistant
        photosensitive resin composition for patterning in manufacture of
        electronic parts)
IT  Fluoropolymers, uses
    RL: POF (Polymer in formulation); TEM (Technical or engineered material
    use); USES (Uses)
        (polyamide-polyether-, hydroxy-containing; pos.-working heat-resistant
        photosensitive resin composition for patterning in manufacture of
        electronic parts)
IT  Polyamides, uses
    RL: POF (Polymer in formulation); TEM (Technical or engineered material
    use); USES (Uses)
        (polyether-, fluorine- and hydroxy-containing; pos.-working heat-resistant
        photosensitive resin composition for patterning in manufacture of
        electronic parts)
IT  Polythiazoles
    RL: POF (Polymer in formulation); TEM (Technical or engineered material
    use); USES (Uses)
        (polyether-; pos.-working heat-resistant photosensitive resin
        composition for patterning in manufacture of electronic parts)
IT  Polyamic acids
    RL: POF (Polymer in formulation); TEM (Technical or engineered material
    use); USES (Uses)
        (polyether-polysulfone-; pos.-working heat-resistant
        photosensitive resin composition for patterning in manufacture of
        electronic parts)
IT  Polyethers, uses
    RL: POF (Polymer in formulation); TEM (Technical or engineered material
    use); USES (Uses)
        (polythiazole-; pos.-working heat-resistant photosensitive
        resin composition for patterning in manufacture of electronic parts)
IT  Heat-resistant materials
    Photoimaging
    Positive photoresists
        (pos.-working heat-resistant photosensitive resin composition for
        patterning in manufacture of electronic parts)
IT  Polyamides, uses
    Polyimides, uses
    Polyoxyphenylenes

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RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (pos.-working heat-resistant **photosensitive** resin composition for patterning in manufacture of electronic parts)

IT 145531-13-1 629598-04-5 663627-01-8 679837-99-1 680187-93-3 680571-00-0

RL: MOA (Modifier or additive use); USES (Uses)  
 (pos.-working heat-resistant **photosensitive** resin composition for patterning in manufacture of electronic parts)

IT 51961-08-1 52004-37-2 74951-91-0 **112480-82-7** 112492-60-1 146103-12-0 679837-98-0

RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
 (pos.-working heat-resistant **photosensitive** resin composition for patterning in manufacture of electronic parts)

IT 66003-76-7 115298-63-0 137308-86-2

RL: TEM (Technical or engineered material use); USES (Uses)  
 (pos.-working heat-resistant **photosensitive** resin composition for patterning in manufacture of electronic parts)

L9 ANSWER 23 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:78082 CAPLUS  
 DN 140:129248  
 ED Entered STN: 30 Jan 2004  
 TI Plasma treatment of resin membrane and treated membranes for semiconductive elements  
 IN Tomikawa, Masao; Yumiba, Tomoyuki  
 PA Toray Industries, Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM H01L021-312  
 ICS H01L021-768  
 CC 38-2 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 37, 42, 76  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004031565	A2	20040129	JP 2002-184349	20020625
PRAI JP 2002-184349		20020625		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004031565	ICM	H01L021-312
	ICS	H01L021-768
	IPCI	H01L0021-312 [ICM,7]; H01L0021-768 [ICS,7]
	FTERM	5F033/QQ74; 5F033/RR21; 5F033/RR22; 5F033/RR27; 5F033/SS22; 5F033/WW03; 5F033/WW04; 5F058/AC02; 5F058/AC07; 5F058/AD04; 5F058/AD09; 5F058/AG01; 5F058/AG07; 5F058/AH03

AB To improve the chemical resistance of a resin membrane, such as **photosensitive** polyimide and polybenzoxazole, is plasma treated in O<sub>2</sub>, N<sub>2</sub>, perfluoromethane, trifluoromethane, CO<sub>2</sub>, or hexafluorosulfur after being cured in N<sub>2</sub> at 250-400°. Semiconductive elements with solder vamp structure are produced by coating a **photosensitive** polyimide or polybenzoxazole precursor on a semiconductive substrate, followed by treating as described above. Thus, **photosensitive** polyimide (PW 1000) was coated on a wafer and then cured at 170° for 30 min and 350° for 1 h, followed by plasma treating at 0.5 Torr and a O<sub>2</sub> flow rate of 50 mL/min to receive a **photosensitive** polyimide membrane.

ST plasma polyimide polybenzoxazole membrane semiconductive element  
 IT Plasma  
 (low-pressure; plasma treatment of resin membrane for semiconductive elements)

IT Membranes, nonbiological  
 Semiconductor devices  
 (plasma treatment of resin membrane for semiconductive elements)



IT Polybenzoxazoles  
 RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
 (plasma treatment of resin membrane for semiconductive elements)

IT Polyimides, uses  
 RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)  
 (plasma treatment of resin membrane for semiconductive elements)

IT Polyethers, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
 (polyamide-, fluorine-containing; plasma treatment of resin membrane for semiconductive elements)

IT Fluoropolymers, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
 (polyamide-polyether-; plasma treatment of resin membrane for semiconductive elements)

IT Polyamides, uses  
 RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing; plasma treatment of resin membrane for semiconductive elements)

IT 112480-82-7P 242460-68-0P  
 RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
 (plasma treatment of resin membrane for semiconductive elements)

IT 300544-87-0, PW 1000  
 RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)  
 (plasma treatment of resin membrane for semiconductive elements)

IT 137902-98-8P  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
 (plasma treatment of resin membrane for semiconductive elements)

IT 3770-97-6 110726-28-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (plasma treatment of resin membrane for semiconductive elements)

IT 121-44-8, Triethylamine, reactions  
 RL: RGT (Reagent); RACT (Reactant or reagent)  
 (plasma treatment of resin membrane for semiconductive elements)

L9 ANSWER 24 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:78080 CAPLUS

DN 140:129247

ED Entered STN: 30 Jan 2004

TI Thermal treatment of resin membrane and treated membranes for semiconductive elements

IN Tomikawa, Masao; Yumiba, Tomoyuki

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01L021-312

CC 38-2 (Plastics Fabrication and Uses)

Section cross-reference(s): 37, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004031564	A2	20040129	JP 2002-184348	20020625
PRAI	JP 2002-184348		20020625		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004031564	ICM	H01L021-312
	IPCI	H01L0021-312 [ICM,7]
	FTERM	5F058/AA02; 5F058/AA05; 5F058/AC04; 5F058/AC07; 5F058/AF04; 5F058/AG01; 5F058/AG10; 5F058/AH03

AB A resin membrane, such as **photosensitive** polyimide and polybenzoxazole, is thermally treated at 250-400° for 10 min - 2 h

in an N2 atmosphere containing 1-25 % O2 to improve the chemical resistance of the membrane. Semiconductive elements with solder vamp structure are produced by coating a **photosensitive** polyimide or polybenzoxazole precursor on a semiconductive substrate, followed by thermal treatment as described above. Thus, **photosensitive** polyimide (PW 1000) was coated and cured on a wafer to form a membrane, which was then treated at 170° for 30 min and 350° for 1 h.

ST thermal treatment polyimide polybenzoxazole membrane semiconductive element

IT Polyethers, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
(polyamide-, fluorine-containing; thermal treatment of resin membrane and treated membranes for semiconductive elements)

IT Fluoropolymers, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
(polyamide-polyether-; thermal treatment of resin membrane and treated membranes for semiconductive elements)

IT Polyamides, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
(polyether-, fluorine-containing; thermal treatment of resin membrane and treated membranes for semiconductive elements)

IT Membranes, nonbiological  
Semiconductor devices  
(thermal treatment of resin membrane and treated membranes for semiconductive elements)

IT Polybenzoxazoles  
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
(thermal treatment of resin membrane and treated membranes for semiconductive elements)

IT Polyimides, uses  
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)  
(thermal treatment of resin membrane and treated membranes for semiconductive elements)

IT **112480-82-7P** 242460-68-0P  
RL: DEV (Device component use); IMF (Industrial manufacture); POF (Polymer in formulation); PREP (Preparation); USES (Uses)  
(thermal treatment of resin membrane and treated membranes for semiconductive elements)

IT 300544-87-0, PW 1000  
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)  
(thermal treatment of resin membrane and treated membranes for semiconductive elements)

IT 137902-98-8P  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
(thermal treatment of resin membrane and treated membranes for semiconductive elements)

IT 3770-97-6 110726-28-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(thermal treatment of resin membrane and treated membranes for semiconductive elements)

IT 121-44-8, Triethylamine, reactions  
RL: RGT (Reagent); RACT (Reactant or reagent)  
(thermal treatment of resin membrane and treated membranes for semiconductive elements)

L9 ANSWER 25 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2003:794054 CAPLUS  
DN 139:293120  
ED Entered STN: 10 Oct 2003  
TI Heat-resistant **photoimaging** polymer compositions for insulators and manufacture of semiconductor devices using them  
IN Kimura, Masashi; Kanaya, Ryuichiro; Maruyama, Kimiyuki  
PA Asahi Kasei Corporation, Japan  
SO Jpn. Kokai Tokkyo Koho, 22 pp.

CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G03F007-038  
ICS C08F290-14; G03F007-004  
CC 38-3 (Plastics Fabrication and Uses)  
Section cross-reference(s): 74, 76  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003287889	A2	20031010	JP 2002-202732	20020711
	WO 2004008252	A1	20040122	WO 2003-JP8792	20030710
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	TW 224716	B1	20041201	TW 2003-92118892	20030710
	EP 1536286	A1	20050601	EP 2003-741329	20030710
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
	US 2005244739	A1	20051103	US 2005-520417	20050106
PRAI	JP 2002-17610	A	20020125		
	JP 2002-202732	A	20020711		
	WO 2003-JP8792	W	20030710		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003287889	ICM	G03F007-038
	ICS	C08F290-14; G03F007-004
	IPCI	G03F0007-038 [ICM,7]; C08F0290-14 [ICS,7]; G03F0007-004 [ICS,7]
WO 2004008252	IPCI	G03F0007-038 [ICM,7]; G03F0007-027 [ICS,7]; G03F0007-004 [ICS,7]; C08G0073-06 [ICS,7]
	ECLA	G03F007/035; G03F007/038P
TW 224716	IPCI	G03F0007-038 [ICM,7]; C08F0290-14 [ICS,7]
EP 1536286	IPCI	G03F0007-038 [ICM,7]; G03F0007-027 [ICS,7]; G03F0007-004 [ICS,7]; C08G0073-06 [ICS,7]
	ECLA	G03F007/035; G03F007/038P
US 2005244739	IPCI	G03C0001-492 [ICM,7]
	IPCR	G03F0007-038 [I,A]; G03F0007-038 [I,C]
	NCL	430/270.100
	ECLA	G03F007/035; G03F007/038P

AB The compns. comprise (A) polyamides having **photopolymerizable** unsatd. bonds 100, (B) monomers having **photopolymerizable** double bonds 1-50, (C) **photopolymer**. initiators 1-20, and (D) thermal crosslinkers 5-30 parts. Thus, 2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane-diphenyl ether-4,4'-dicarbonyl dichloride copolymer was reacted with 2-isocyanatoethyl methacrylate, mixed with melamine resin (Nikalac MW 30HM), tetraethylene glycol dimethacrylate, and N,N'-bis(2-methacryloyloxyethyl)urea, applied on a Si wafer, imagewise irradiated, and heat-cured to give a polybenzoxazole film showing high resolution and good chemical resistance.

ST **photoimaging** compn acrylic polyimide elec insulator; acrylic polybenzoxazole neg **photoimaging** semiconductor device

IT Aminoplasts

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(Nikalac MX 280, Nikalac MX 270, crosslinker; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Polyethers, uses

RL: IMF (Industrial manufacture); TEM (Technical or engineered material

use); PREP (Preparation); USES (Uses)  
 (aminoplast-polybenzoxazole-, fluorine-containing, acrylic; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Fluoropolymers, uses  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (aminoplast-polybenzoxazole-polyether-, acrylic; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Polyimides, uses  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (aminoplast-polyether-, acrylic; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Polybenzoxazoles  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (aminoplast-polyether-, fluorine-containing, acrylic; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Polyethers, uses  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (aminoplast-polyimide-, acrylic; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Aminoplasts  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (crosslinker; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Electric insulators  
**Photoimaging** materials  
**Photolithography**  
 Semiconductor device fabrication  
 (heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Polyethers, uses  
 RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (polyamic acid-; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (polyamide-, fluorine-containing; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (polyamide-polyether-; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Aminoplasts  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-, fluorine-containing, acrylic; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Polyamides, preparation  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (polyether-, fluorine-containing; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

device insulators)

IT Polyamic acids  
 RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (polyether-; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT Aminoplasts  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-polyimide-, acrylic; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT 9011-05-6, Urea resin  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (Nikalac MX 280, Nikalac MX 270, crosslinker; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT 609307-54-2P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-diphenyl ether-4,4'-dicarbonyl dichloride copolymer carbamate with 2-isocyanatoethyl methacrylate, polymer with N,N'-bis(2-methacryloyloxyethyl)urea, tetraethylene glycol dimethacrylate, and urea resin  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (comprised of actual and assumed monomers; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT 9003-08-1, Nikalac MW 30HM 15968-37-3, Cymel 1170 66810-89-7, Cymel 1123  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (crosslinker; heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT 194540-58-4P 286401-59-0P 389104-91-0P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-diphenyl ether-4,4'-dicarbonyl dichloride copolymer carbamate with 2-isocyanatoethyl methacrylate  
 RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT 109-17-1, Tetraethylene glycol dimethacrylate 86219-64-9  
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT **112480-82-7P** 133440-72-9P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-diphenyl ether-4,4'-dicarbonyl dichloride copolymer  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

IT 609307-53-1P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-diphenyl ether-4,4'-dicarbonyl dichloride copolymer carbamate with 2-isocyanatoethyl methacrylate, polymer with N,N'-bis(2-methacryloyloxyethyl)urea, Nikalac MW 30HM, and tetraethylene glycol dimethacrylate 609307-55-3P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-diphenyl ether-4,4'-dicarbonyl dichloride copolymer carbamate with 2-isocyanatoethyl methacrylate, polymer with N,N'-bis(2-methacryloyloxyethyl)urea, Cymel 1170, and tetraethylene glycol dimethacrylate 609307-56-4P, 2,2-Bis(3-amino-4-

hydroxyphenyl)hexafluoropropane-diphenyl ether-4,4'-dicarbonyl dichloride copolymer carbamate with 2-isocyanatoethyl methacrylate, polymer with N,N'-bis(2-methacryloyloxyethyl)urea, Cymel 1123, and tetraethylene glycol dimethacrylate 609342-98-5P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(heat- and chemical-resistant **photoimaging** polyimides or polybenzoxazoles for semiconductor device insulators)

L9 ANSWER 26 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2003:353728 CAPLUS

DN 138:376391

ED Entered STN: 09 May 2003

TI High-sensitivity positive **photoimaging** resin compositions and manufacture of heat-resistant relief patterns

IN Sasaki, Takahiro; Nishikawa, Masato

PA Asahi Kasei Corporation, Japan; Clariant Japan K. K.

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-022

ICS C08G073-10; C08G073-22; G03F007-037; H01L021-027; H01L021-312

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38, 76

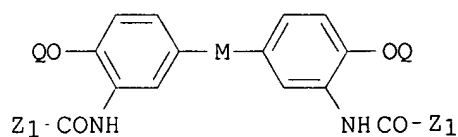
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003131368	A2	20030509	JP 2001-327368	20011025
PRAI	JP 2001-327368		20011025		

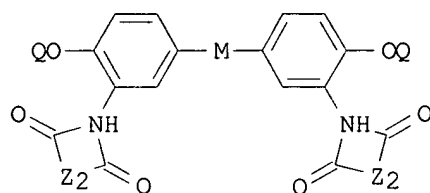
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003131368	ICM	G03F007-022
	ICS	C08G073-10; C08G073-22; G03F007-037; H01L021-027; H01L021-312
	IPCI	G03F0007-022 [ICM,7]; C08G0073-10 [ICS,7]; C08G0073-22 [ICS,7]; G03F0007-037 [ICS,7]; H01L0021-027 [ICS,7]; H01L0021-312 [ICS,7]

GI



I



II

AB The compns., useful for semiconductor devices, interlayer insulators, etc., comprise (A) 100 parts polyamides comprising repeating units [NHX1(OH)pNHCOY1(OH)q(CO2R1)mCO]n (X1 = C≥2-organic group with 2-4 valence; Y1 = C≥2-organic group with 2-6 valence; p, q = 0-4; R1 = H, C1-20-organic group; m = 0-2; n = 2-1000; m = p = q ≠ 0; R1 = group having phenolic OH when p = q = 0) and (B) 1-100 parts **photosensitive** diazoquinones I or II [Z1, Z2 = organic group having tertiary or quaternary aliphatic C; M = C(CF3)2, SO2, CO; Q = H, 6-diazo-5,6-dihydro-5-oxo-1-naphthalenylsulfonyl, 3-diazo-3,4-dihydro-4-oxo-1-naphthalenylsulfonyl]. The diazoquinones increase solubility of the exposed parts.

ST polyamide pos **photoimaging** photoactive PAC

diazoquinone; **photolithog** pos pattern polyamide heat resistance

IT **Photoimaging** materials

**Photolithography**  
 (diazquinone **photoactive** compds. for high-sensitivity pos.  
**photoimaging** polyamide compns.)

IT Polyamides, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (fluorine-containing; diazoquinone **photoactive** compds. for high-sensitivity pos. **photoimaging** polyamide compns.)

IT Polysiloxanes, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-, fluorine-containing; diazoquinone **photoactive** compds. for high-sensitivity pos. **photoimaging** polyamide compns.)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-, diazoquinone **photoactive** compds. for high-sensitivity pos. **photoimaging** polyamide compns.)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-siloxane-, diazoquinone **photoactive** compds. for high-sensitivity pos. **photoimaging** polyamide compns.)

IT Polyamides, preparation  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (siloxane-, fluorine-containing; diazoquinone **photoactive** compds. for high-sensitivity pos. **photoimaging** polyamide compns.)

IT 405506-81-2P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (diazquinone **photoactive** compds. for high-sensitivity pos. **photoimaging** polyamide compns.)

IT 85-42-7DP, 1,2-Cyclohexanedicarboxylic acid anhydride, reaction products with polyamides 101-80-4DP, 4,4'-Diaminodiphenyl ether, polyamides 552-30-7DP, Trimellitic anhydride, reaction products with diaminodihydroxyfluoropropane, hydroxybenzyl alc., and hydroxybenzotriazole, polyamides 620-24-6DP, 3-Hydroxybenzyl alcohol, reaction products with diaminodihydroxyfluoropropane, trimellitic anhydride, and hydroxybenzotriazole, polyamides 826-62-0DP, 5-Norbornene-2,3-dicarboxylic acid anhydride, polyamides 2592-95-2DP, 1-Hydroxy-1,2,3-benzotriazole, reaction products with diaminodihydroxyfluoropropane, trimellitic anhydride, and hydroxybenzyl alc., polyamides 83558-87-6DP, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane, reaction products with trimellitic anhydride, hydroxybenzyl alc., and hydroxybenzotriazole, polyamides **112480-82-7DP**, reaction products with cyclohexanedicarboxylic anhydride 133440-72-9DP, reaction products with cyclohexanedicarboxylic anhydride 178991-25-8P 340294-23-7P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (diazquinone **photoactive** compds. for high-sensitivity pos. **photoimaging** polyamide compns.)

IT 826-62-0, 5-Norbornene-2,3-dicarboxylic acid anhydride 7545-50-8, 3,3'-Diamino-4,4'-dihydroxydiphenylsulfone 36451-09-9, 1,2-Naphthoquinonediazide-4-sulfonyl chloride 83558-87-6, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (diazquinone **photoactive** compds. for high-sensitivity pos. **photoimaging** polyamide compns.)

IT 502495-82-1P 521327-32-2P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (**photoactive** compound; diazoquinone **photoactive** compds. for high-sensitivity pos. **photoimaging** polyamide compns.)

AN 2003:58816 CAPLUS  
 DN 138:107157  
 ED Entered STN: 24 Jan 2003  
 TI **Photopolymerization** of light emitting polymer for electronic displays  
 IN O'Neill, Mary; Kelly, Stephen Malcolm; Contoret, Adam Edward Alexander; Richards, Gary James  
 PA UK  
 SO U.S. Pat. Appl. Publ., 23 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM C08G002-00  
 ICS C08F002-46; C08J003-28; C09K019-52  
 INCL 522001000; 522167000; 522168000; 522149000; 522162000; 252299100; 252299620; 252299670; 252299010  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 73, 75  
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003018097	A1	20030123	US 2001-898748	20010703
	US 2003119936	A1	20030626	US 2002-187381	20020701
	US 6867243	B2	20050315		
	US 2005004251	A1	20050106	US 2004-858864	20040601
	US 2005004252	A1	20050106	US 2004-859446	20040601
	US 2005096404	A1	20050505	US 2004-858507	20040602
PRAI	GB 2001-15986	A	20010629		
	US 2001-898748	A2	20010703		
	US 2002-187381	A1	20020701		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2003018097	ICM	C08G002-00
	ICS	C08F002-46; C08J003-28; C09K019-52
	INCL	522001000; 522167000; 522168000; 522149000; 522162000; 252299100; 252299620; 252299670; 252299010
	IPCI	C08G0002-00 [ICM,7]; C08F0002-46 [ICS,7]; C08J0003-28 [ICS,7]; C09K0019-52 [ICS,7]
	IPCR	C07D0285-00 [I,C]; C07D0285-14 [I,A]; C07D0333-00 [I,C]; C07D0333-08 [I,A]; C08G0061-00 [I,C]; C08G0061-02 [I,A]; C08G0061-12 [I,A]; C09K0019-34 [I,A]; C09K0019-38 [I,C]; C09K0019-38 [I,A]; C09K0019-60 [I,C]; C09K0019-60 [I,A]; C09K0019-60 [I,C]; G02F0001-13 [N,C]; G02F0001-13357 [N,A]
	NCL	522/001.000
	ECLA	C07D285/14B; C07D333/08; C08G061/02; C08G061/12; C08G061/12D; C09K019/34C; C09K019/38; C09K019/60
US 2003119936	IPCI	C08G0002-00 [ICM,7]; C08F0002-46 [ICS,7]
	IPCR	C07D0285-00 [I,C]; C07D0285-14 [I,A]; C07D0333-00 [I,C]; C07D0333-08 [I,A]; C08G0061-00 [I,C]; C08G0061-12 [I,A]; C09K0019-34 [I,A]; C09K0019-34 [I,C]; C09K0019-38 [I,A]; C09K0019-38 [I,C]; C09K0019-60 [I,A]; C09K0019-60 [I,C]; G02F0001-13 [N,C]; G02F0001-13357 [N,A]
	NCL	522/168.000
	ECLA	C07D285/14B; C07D333/08; C08G061/12; C09K019/34C; C09K019/38; C09K019/60
US 2005004251	IPCI	C08J0003-28 [ICM,7]
	IPCR	C07D0285-00 [I,C]; C07D0285-14 [I,A]; C07D0333-00 [I,C]; C07D0333-08 [I,A]; C08G0061-00 [I,C]; C08G0061-02 [I,A]; C08G0061-12 [I,A]; C09K0019-34 [I,A]; C09K0019-34 [I,C]; C09K0019-38 [I,A]; C09K0019-38 [I,C]; C09K0019-60 [I,A]; C09K0019-60 [I,C]; G02F0001-13 [N,C]; G02F0001-13357 [N,A]
	NCL	522/162.000
	ECLA	C07D285/14B; C07D333/08; C08G061/02; C08G061/12; C08G061/12D; C09K019/34C; C09K019/38; C09K019/60
US 2005004252	IPCI	C08J0003-28 [ICM,7]



IPCR C07D0285-00 [I,C]; C07D0285-14 [I,A]; C07D0333-00 [I,C]; C07D0333-08 [I,A]; C08G0061-00 [I,C]; C08G0061-02 [I,A]; C08G0061-12 [I,A]; C09K0019-34 [I,A]; C09K0019-38 [I,C]; C09K0019-38 [I,A]; C09K0019-60 [I,C]; C09K0019-60 [I,A]; C09K0019-60 [I,C]; G02F0001-13 [N,C]; G02F0001-13357 [N,A]  
 NCL 522/162.000  
 ECLA C07D285/14B; C07D333/08; C08G061/02; C08G061/12; C08G061/12D; C09K019/34C; C09K019/38; C09K019/60  
 US 2005096404 IPCI C08G0002-00 [ICM,7]  
 IPCR C07D0285-00 [I,C]; C07D0285-14 [I,A]; C07D0333-00 [I,C]; C07D0333-08 [I,A]; C08G0061-00 [I,C]; C08G0061-02 [I,A]; C08G0061-12 [I,A]; C09K0019-34 [I,A]; C09K0019-38 [I,C]; C09K0019-38 [I,A]; C09K0019-60 [I,C]; C09K0019-60 [I,A]; C09K0019-60 [I,C]; G02F0001-13 [N,C]; G02F0001-13357 [N,A]  
 NCL 522/001.000  
 ECLA C07D285/14B; C07D333/08; C08G061/02; C08G061/12; C08G061/12D; C09K019/34C; C09K019/38; C09K019/60  
 AB A process for forming a light emitting polymer wherein **photopolymn** . is carried out using a reactive mesogen having an end group susceptible to **photopolymn.**, e.g., by a radical polymerization process. Also, the light emitting polymer produced and methods for using the light emitter in displays, back-lights, electronic apparatus and security viewers. Thus, 2,7-bis(5-(4-[5-(1-vinylallyloxycarbonyl)pentyl]oxy)phenyl)thien-2-yl)-9,9-dipropylfluorene was prepared and polymerized using light from an Argon Ion laser to give a light emitting polymer for electroluminescent devices.  
 ST **photopolymn** light emitting polymer electroluminescent device  
 IT Polyoxadiazoles  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (fluorine-containing, electron-transporting polymer; **photopolymn.** of light emitting polymer for electronic displays)  
 IT Liquid crystals, polymeric  
 (light emitting polymer; **photopolymn.** of light emitting polymer for electronic displays)  
 IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (light emitting polymer; **photopolymn.** of light emitting polymer for electronic displays)  
 IT Electroluminescent devices  
 (**photopolymn.** of light emitting polymer for electronic displays)  
 IT Polymerization  
 (**photopolymn.**; **photopolymn.** of light emitting polymer for electronic displays)  
 IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyoxadiazole-, electron-transporting polymer; **photopolymn.** of light emitting polymer for electronic displays)  
 IT **26916-39-2P** 110604-40-5P 488085-64-9P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (electron-transporting polymer; **photopolymn.** of light emitting polymer for electronic displays)  
 IT 927-58-2P, 4-Bromobutanoyl chloride 4037-45-0P, 9-Propylfluorene 112026-74-1P, 9,9-Dipropylfluorene 157771-56-7P, 2,7-Dibromo-9,9-Dipropylfluorene 426820-24-8P, 2,7-Bis(thien-2-yl)-9,9-dipropylfluorene 426820-25-9P, 2,7-Bis(5-bromothien-2-yl)-9,9-dipropylfluorene 426820-26-0P, 2,7-Bis[5-(4-methoxyphenyl)thien-2-yl]-9,9-dipropylfluorene 426820-27-1P, 2,7-Bis[5-(4-hydroxyphenyl)thien-2-yl]-9,9-dipropylfluorene 426820-30-6P 426820-32-8P, 1,4-Pentadien-3-yl 4-bromobutanoate 488085-56-9P, 1,6-Heptadien-5-yl 5-bromopentanoate 488085-59-2P 488085-61-6P  
 RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(intermediate; **photopolymer**. of light emitting polymer for electronic displays)

IT 301652-15-3P 426820-33-9P 426820-34-0P 426820-35-1P  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (light emitting monomer; **photopolymer**. of light emitting polymer for electronic displays)

IT 387334-17-0P 426820-36-2P 426820-37-3P 426820-38-4P  
 RL: DEV (Device component use); IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (light emitting polymer; **photopolymer**. of light emitting polymer for electronic displays)

IT 14221-01-3, Tetrakis(triphenylphosphine)-palladium(0)  
 RL: CAT (Catalyst use); USES (Uses)  
 (**photopolymer**. of light emitting polymer for electronic displays)

IT 79-37-8, Oxalyl chloride 86-73-7, Fluorene 98-59-9 106-94-5, 1-Bromopropane 124-02-7, Diallylamine 128-08-5, N-Bromosuccinimide 922-65-6, 1,4-Pentadien-3-ol 2623-87-2, 4-Bromobutanoic acid 2883-45-6, 1,6-Heptadien-4-ol 4509-90-4 5720-07-0, 4-(Methoxyphenyl)boronic acid 7726-95-6, Bromine, reactions 10294-33-4, Boron tribromide 22809-37-6, 6-Bromohexanoyl chloride 50816-19-8, 8-Bromooctan-1-ol 54663-78-4, 2-(Tributylstannyl)thiophene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting material; **photopolymer**. of light emitting polymer for electronic displays)

IT 50926-11-9, ITO  
 RL: DEV (Device component use); USES (Uses)  
 (substrate; **photopolymer**. of light emitting polymer for electronic displays)

L9 ANSWER 28 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:734101 CAPLUS  
 DN 137:270515  
 ED Entered STN: 27 Sep 2002  
 TI Positive-working **photosensitive** resin composition and semiconductor device  
 IN Banba, Toshio; Hirano, Takashi  
 PA Sumitomo Bakelite Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 14 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM G03F007-004  
 ICS C08G069-42; C08K005-23; C08K005-49; C08L077-00; G03F007-037; G03F007-075; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002278051	A2	20020927	JP 2001-77602	20010319
PRAI	JP 2001-77602		20010319		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002278051	ICM	G03F007-004
	ICS	C08G069-42; C08K005-23; C08K005-49; C08L077-00; G03F007-037; G03F007-075; H01L021-027
	IPCI	G03F0007-004 [ICM,7]; C08G0069-42 [ICS,7]; C08K0005-23 [ICS,7]; C08K0005-49 [ICS,7]; C08L0077-00 [ICS,7]; G03F0007-037 [ICS,7]; G03F0007-075 [ICS,7]; H01L0021-027 [ICS,7]
AB		The composition comprises (A) a polyamide ECO[(NHX(OH)2NHCOYCO)a(NHZNHCOYCO)b]n NHX(OH)2NHCOE [X = tetravalent cyclic group; Y = divalent cyclic group; X = R1SiR3R4OSiR3R4R2; R1-2 = divalent organic group; R3-4 = monovalent organic group; E = aliphatic or cyclic group having ≥1 alkenyl or alkynyl; a =

60.0-100.0, b = 0-40.0 a + b = 100 mol%; n = 2-500] 100, (B)  
**photosensitive** diazoquinone compound 1-100, and (C) P compound 0.5-20 weight parts. Semiconductor device manufactured by using the pos.  
**photosensitive** composition is also claimed. The composition gives or pale color film with high transparency after curing and less color change on heat processing.

ST pos **photosensitive** resin polyamide polybenzoxazole; diazoquinone phosphorus compd **photosensitive** compn; semiconductor device fabrication **photosensitive** resin compn

IT Polyethers, preparation  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-, fluorine-containing; pos.-working **photosensitive** resin composition containing polyamide, diazoquinone, and phosphorus compound)

IT Fluoropolymers, preparation  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-polyether-; pos.-working **photosensitive** resin composition containing polyamide, diazoquinone, and phosphorus compound)

IT Polyamides, preparation  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing; pos.-working **photosensitive** resin composition containing polyamide, diazoquinone, and phosphorus compound)

IT **Photoresists**  
 (pos.-working **photosensitive** resin composition containing polyamide, diazoquinone, and phosphorus compound)

IT Polybenzoxazoles  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (pos.-working **photosensitive** resin composition containing polyamide, diazoquinone, and phosphorus compound)

IT Polyamides, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (pos.-working **photosensitive** resin composition containing polyamide, diazoquinone, and phosphorus compound)

IT Semiconductor device fabrication  
 (pos.-working **photosensitive** resin composition containing polyamide, diazoquinone, and phosphorus compound for manufacture of semiconductor device)

IT 976-56-7 26741-53-7, Bis(2,4-di-tert-butylphenyl)pentaerythritol diphosphite 31570-04-4, Tris(2,4-di-tert-butylphenyl) phosphite 86624-80-8 145650-60-8  
 RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
 (pos.-working **photosensitive** resin composition containing polyamide, diazoquinone, and phosphorus compound)

IT 826-62-0DP, 5-Norbornene-2,3-dicarboxylic acid anhydride, reaction products with polyamide **112480-82-7DP**, reaction products with norbornenedicarboxylic acid anhydride 113742-48-6DP, reaction products with norbornenedicarboxylic acid anhydride 242460-68-0DP, Hexafluoro-2,2-bis(3-amino-4-hydroxyphenyl)propane-1-hydroxybenzotriazole diphenylether-4,4'-dicarboxylic acid diester copolymer, reaction products with norbornenedicarboxylic acid anhydride 242460-72-6DP, Hexafluoro-2,2-bis(3-amino-4-hydroxyphenyl)propane-1-hydroxybenzotriazole isophthalate-1-hydroxybenzotriazole terephthalate copolymer, reaction products with norbornenedicarboxylic acid anhydride 243133-24-6DP, 1,3-Bis(3-aminopropyl)-1,1,3,3-tetramethyldisiloxane-hexafluoro-2,2-bis(3-amino-4-hydroxyphenyl)propane-1-hydroxybenzotriazole diphenyl ether-4,4'-dicarboxylic acid diester copolymer, reaction products with norbornenedicarboxylic acid anhydride  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (pos.-working **photosensitive** resin composition containing polyamide, diazoquinone, and phosphorus compound)

IT 135668-77-8 137902-98-8 138636-85-8 138636-86-9, Tris(4-hydroxyphenyl)methane 1,2-naphthoquinonediazide-5-sulfonate 143179-02-6 238091-14-0, Tris(4-hydroxyphenyl)methane 1,2-naphthoquinonediazide-4-sulfonate  
 RL: TEM (Technical or engineered material use); USES (Uses)

(pos.-working **photosensitive** resin composition containing polyamide, diazoquinone, and phosphorus compound)

L9 ANSWER 29 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:674620 CAPLUS

DN 137:202374

ED Entered STN: 06 Sep 2002

TI Amine-modified gelatin layer for improved adhesion of **photographic** elements after annealing

IN Bauer, Charles L.; Chen, Janglin; Harbison, Kenneth G.; Yau, Hwei-ling

PA Eastman Kodak Company, USA

SO U.S. Pat. Appl. Publ., 6 pp., Cont.-in-part of U. S. Ser. No. 751,550.

CODEN: USXXCO

DT Patent

LA English

IC ICM B32B027-36

ICS C07K014-78; G03C001-93; G03C001-795

INCL 428480000

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 74

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002122951	A1	20020905	US 2001-854781	20010514
	US 6517947	B2	20030211		
	EP 1220030	A1	20020703	EP 2001-204948	20011218
	EP 1220030	B1	20040225		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002229158	A2	20020814	JP 2001-399788	20011228
PRAI	US 2000-751550	A2	20001229		
	US 2001-854781	A	20010514		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2002122951	ICM	B32B027-36
	ICS	C07K014-78; G03C001-93; G03C001-795
	INCL	428480000
	IPCI	B32B0027-36 [ICM,7]; C07K0014-78 [ICS,7]; G03C0001-93 [ICS,7]; G03C0001-795 [ICS,7]
	IPCR	B41M0005-40 [I,C]; B41M0005-41 [I,A]; B41M0005-44 [I,A]; G03C0001-795 [N,A]; G03C0001-795 [N,C]; G03C0001-91 [I,C]; G03C0001-93 [I,A]
	NCL	428/480.000
	ECLA	B41M005/40B; B41M005/40C2; G03C001/93
EP 1220030	IPCI	G03C0001-93 [ICM,6]
	ECLA	B41M005/40B; B41M005/40C2; G03C001/93
JP 2002229158	IPCI	G03C0001-89 [ICM,7]; G03C0001-795 [ICS,7]; G03C0001-81 [ICS,7]

OS MARPAT 137:202374

AB An imaging support comprises: a polyester support; an adhesive layer superposed to the support; and on the adhesive layer: an amine modified gelatin subbing layer, the amine modified gelatin consisting of a polypeptide gelatin-amine reaction product, the modified gelatin being further characterized by having from 1% to about 40% of the free carboxyl groups in aspartic and glutamic acid moieties in the polypeptide being substituted with amine groups; wherein the support has been annealed at a temperature that is 50 to 5° less than the glass transition temperature of the support for at least 6 h.

ST **photog** film support polyester amine modified gelatin

IT Adhesives

(amine-modified gelatin layer for improved adhesion of **photog** . elements after annealing)

IT Polyesters, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(amine-modified gelatin layer for improved adhesion of **photog** . elements after annealing)

IT Gelatins, uses

RL: TEM (Technical or engineered material use); USES (Uses)

(amine-modified, subbing layer; amine-modified gelatin layer for improved adhesion of **photog.** elements after annealing)

IT **Photographic** films  
(supports; amine-modified gelatin layer for improved adhesion of **photog.** elements after annealing)

IT 24936-69-4, Poly-1,4-cyclohexanedimethylene terephthalate  
**24936-76-3** 24968-11-4, Polyethylene naphthalate 24968-12-5,  
Polybutylene terephthalate 24980-45-8 25037-99-4 25038-59-9,  
Polyethylene terephthalate, uses 25230-87-9 26062-94-2, Polybutylene  
terephthalate  
RL: TEM (Technical or engineered material use); USES (Uses)  
(amine-modified gelatin layer for improved adhesion of **photog**  
. elements after annealing)

IT 107-15-3, Ethylene diamine, uses 110-85-0, Piperazine, uses  
25249-59-6, Acrylic acid-acrylonitrile-vinylidene chloride copolymer  
RL: TEM (Technical or engineered material use); USES (Uses)  
(subbing layer; amine-modified gelatin layer for improved adhesion of  
**photog.** elements after annealing)

L9 ANSWER 30 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:639718 CAPLUS  
DN 138:35545  
ED Entered STN: 25 Aug 2002  
TI New **photoactivators** for multiphoton excited three-dimensional  
submicron cross-linking of proteins: bovine serum albumin and type 1  
collagen  
AU Pitts, Jonathan D.; Howell, Amy R.; Taboada, Rosa; Banerjee, Ipsita; Wang,  
Jun; Goodman, Steven L.; Campagnola, Paul J.  
CS Center for Biomaterials, University of Connecticut Health Center,  
Farmington, CT, 06070, USA  
SO Photochemistry and Photobiology (2002), 76(2), 135-144  
CODEN: PHCBAP; ISSN: 0031-8655  
PB American Society for Photobiology  
DT Journal  
LA English  
CC 9-5 (Biochemical Methods)  
AB We report the synthesis and optical characterization of two new  
**photoactivators** and demonstrate their use for multiphoton excited  
three-dimensional free-form fabrication with proteins. These reagents  
were developed with the goal of crosslinking Type 1 collagen. This  
crosslinking process produces structures on the micron and submicron size  
scales. A rose bengal diisopropyl amine derivative combines the classic  
**photoactivator** and co-initiator system into one mol., reducing the  
reaction kinetics and increasing crosslinking efficiency. This derivative was  
successful at producing stable structures from collagen, whereas rose  
bengal alone was not effective. A benzophenone dimer connected by a  
flexible diamine tether was also synthesized. This activator has two  
**photochem.** reactive groups and is highly efficient in crosslinking  
bovine serum albumin and Type 1 collagen to form stable, robust  
structures. This approach is more flexible in terms of crosslinking a  
variety of proteins than by traditional benzophenone **photochem.**  
The **photophys.** properties vary greatly from that of  
benzophenone, with the appearance of a new, lower energy absorption band  
( $\lambda_{\text{max}}$  .apprx.370 nm in water) and broad, visible emission band  
(.apprx.500 nm maximum). This absorption band is highly solvatochromic,  
suggesting it arises, at least in part, from a charge transfer  
interaction. Collagens are typically difficult to cross-link  
**photochem.**, and the results here suggest that these two new  
activators will be suitable for crosslinking other forms of collagen and  
addnl. proteins for biomedical applications such as the de novo assembly  
of biomimetic tissue scaffolds.

ST **photoactivator** multiphoton crosslinking serum albumin collagen  
IT Imaging  
(flourescent; **photoactivators** for multiphoton excited  
three-dimensional submicron crosslinking of bovine serum albumin and  
type 1 collagen)

IT Absorption spectroscopy  
Electron transfer  
Molecular association

Reaction kinetics  
 (photoactivators for multiphoton excited three-dimensional  
 submicron crosslinking of bovine serum albumin and type 1 collagen)

IT Albumins, properties  
 RL: PRP (Properties)  
 (serum; photoactivators for multiphoton excited  
 three-dimensional submicron crosslinking of bovine serum albumin and  
 type 1 collagen)

IT Collagens, properties  
 RL: PRP (Properties)  
 (type I; photoactivators for multiphoton excited  
 three-dimensional submicron crosslinking of bovine serum albumin and  
 type 1 collagen)

IT 478678-67-0P 478678-68-1P  
 RL: ARU (Analytical role, unclassified); SPN (Synthetic preparation); ANST  
 (Analytical study); PREP (Preparation)  
 (photoactivators for multiphoton excited three-dimensional  
 submicron crosslinking of bovine serum albumin and type 1 collagen)

IT 106-38-7, 4-Bromotoluene 1122-91-4, 4-Bromobenzaldehyde  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (photoactivators for multiphoton excited three-dimensional  
 submicron crosslinking of bovine serum albumin and type 1 collagen)

IT 29334-17-6P 51310-29-3P 51310-30-6P 76693-57-7P 478678-66-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (photoactivators for multiphoton excited three-dimensional  
 submicron crosslinking of bovine serum albumin and type 1 collagen)

RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD  
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L9 ANSWER 31 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:570324 CAPLUS

DN 137:125817

ED Entered STN: 01 Aug 2002

TI Alkoxysilane compounds and heat-resistant **photosensitive** resin compositions containing them

IN Kimura, Masashi; Kanetani, Ryuichiro

PA Asahi Kasei Corporation, Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07F007-18

ICS C08F002-44; C08F002-46; C08F283-00; G03F007-027; G03F007-037;

G03F007-075; H01L021-027; H01L021-312

CC 37-3 (Plastics Manufacture and Processing)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002212192	A2	20020731	JP 2001-14759	20010123
PRAI	JP 2001-14759		20010123		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002212192	ICM	C07F007-18
	ICS	C08F002-44; C08F002-46; C08F283-00; G03F007-027; G03F007-037; G03F007-075; H01L021-027; H01L021-312
	IPCI	C07F0007-18 [ICM,7]; C08F0002-44 [ICS,7]; C08F0002-46 [ICS,7]; C08F0283-00 [ICS,7]; G03F0007-027 [ICS,7]; G03F0007-037 [ICS,7]; G03F0007-075 [ICS,7]; H01L0021-027 [ICS,7]; H01L0021-312 [ICS,7]

AB The resin compns. with good adhesion, useful for electronic passivation and insulation films, buffer coatings, etc., comprise (A) alkoxysilylureido group-terminated (poly)amide compound having unit(s) derived from dihydroxyarom. diamine and aromatic dicarboxylic acid, (B) heat-resistant resin precursors, (C) **photopolymn.** initiators, (D) crosslinkers and (E) diluents. Thus, preparing a low-mol.-weight copolymer of 2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane (I) and di-Ph ether 4,4'-dicarbonyl dichloride (II), and modifying the copolymer with 3-isocyanopropyltriethoxysilane gave a component A. Similarly, preparing a higher mol.-weight I-II copolymer and modifying with 2-isocyanatoethyl methacrylate gave a base resin precursor (B). Mixing the B 100 with tetraethylene glycol dimethacrylate 20, N,N'-di(2-methacryloxyethyl)urea 20, 1-phenyl-1,2-propanedione-2-(O-benzoyl)oxime 2, N-nitrosodiphenylamine 0.1, Michler's ketone 2 and A 30 in NMP 220 parts gave a **photocurable** varnish with good **photo**-curability, adhesion and pattern precision.

ST patterning varnish **photo** curability hydroxypolyamide benzoxazole resin electronic passivation

IT Polyethers, preparation

RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(acrylic-polyamide-, fluorine-containing, precursors; alkoxysilane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT Fluoropolymers, preparation

Polysulfones, preparation

RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(acrylic-polyamide-polyether-, precursors; alkoxysilane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT Polyethers, preparation

RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(acrylic-polyamide-polysulfone-, precursors; alkoxy silane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT Polysulfones, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic-polybenzoxazole-polyether-, alkoxy silane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic-polybenzoxazole-polysulfone-, alkoxy silane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT Polyamides, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (acrylic-polyether-, fluorine-containing, precursors; alkoxy silane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT Polyamides, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (acrylic-polyether-polysulfone-, precursors; alkoxy silane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT Polybenzoxazoles  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic-polyether-polysulfone-, alkoxy silane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT Electric insulators  
 Heat-resistant materials  
 Semiconductor device fabrication  
 (alkoxy silane compds. and heat-resistant **photosensitive** resin compns. containing them)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-, fluorine-containing, **photocurable**; alkoxy silane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-, **photocurable**; alkoxy silane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT Polybenzoxazoles  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-, fluorine-containing, **photocurable**; alkoxy silane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT 26010-72-0DP, reaction products with isocyanato group-containing terminating compds.  
 RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (alkoxy silane compds. and heat-resistant **photosensitive** resin compns. containing them)

IT 101-80-4, 4,4'-Diaminodiphenyl ether 24801-88-5, 3-Isocyanopropyltriethoxysilane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (alkoxy silane compds. and heat-resistant **photosensitive** resin



comps. containing them)

IT 24801-88-5DP, 3-Isocyanopropyltriethoxysilane, reaction products with hydroxy polyamides 30674-80-7DP, reaction products with hydroxy polyamides 51202-69-8DP, Bis(3-amino-4-hydroxyphenyl)sulfone-diphenyl ether 4,4'-dicarbonyl dichloride copolymer, reaction products with isocyanato group-containing terminating compds. 56793-42-1DP, reaction products with isocyanato group-containing terminating compds. 112480-82-7DP, reaction products with isocyanato group-containing terminating compds. 112480-83-8DP, reaction products with isocyanato group-containing terminating compds. 133440-72-9DP, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-diphenyl ether 4,4'-dicarbonyl dichloride copolymer, reaction products with isocyanato group-containing terminating compds.

RL: IMF (Industrial manufacture); PRP (Properties); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(alkoxysilane compds. and heat-resistant **photosensitive** resin compns. containing them and their use in insulation or passivation)

IT 109-17-1P, Tetraethylene glycol dimethacrylate 86219-64-9P

RL: IMF (Industrial manufacture); PREP (Preparation)

(crosslinkers; alkoxysilane compds. and heat-resistant **photosensitive** resin compns. containing them)

IT 444167-11-7P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(crosslinkers; alkoxysilane compds. and heat-resistant **photosensitive** resin compns. containing them)

IT 17292-57-8

RL: CAT (Catalyst use); USES (Uses)

(**photoinitiator**; alkoxysilane compds. and heat-resistant **photosensitive** resin compns. containing them)

IT 90-94-8, Michler's ketone

RL: CAT (Catalyst use); USES (Uses)

(**photosensitizer**; alkoxysilane compds. and heat-resistant **photosensitive** resin compns. containing them)

L9 ANSWER 32 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:447165 CAPLUS

DN 137:26112

ED Entered STN: 14 Jun 2002

TI **Photosensitive** polymerizable compositions containing poly(hydroxyamides), pattern formation using the compositions, and electronic devices having the pattern

IN Oe, Tadayuki; Nunomura, Masataka; Anzai, Takanori; Fujieda, Nagatoshi

PA Hitachi Chemical Du Pont Micro System Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-037

ICS C08K005-00; C08K005-03; C08K005-134; C08L077-06; G03F007-004; H01L021-027; H01L021-312

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002169283	A2	20020614	JP 2000-364142	20001130
PRAI	JP 2000-364142		20001130		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002169283	ICM	G03F007-037
	ICS	C08K005-00; C08K005-03; C08K005-134; C08L077-06; G03F007-004; H01L021-027; H01L021-312
	IPCI	G03F0007-037 [ICM,7]; C08K0005-00 [ICS,7]; C08K0005-03 [ICS,7]; C08K0005-134 [ICS,7]; C08L0077-06 [ICS,7]; G03F0007-004 [ICS,7]; H01L0021-027 [ICS,7];

OS MARPAT 137:26112

AB The compns., useful for formation of a surface protective film or an interlayer insulating film for electronic devices, contain (a) alkaline solution-soluble polyamides having a repeating unit [NHU(OH)2NHC(OVCO)] (U = tetravalent group; V = divalent group), (b) **photoacid** generators, (c) compds. having  $\geq 2$  acyloxymethyl group and phenolic OH group, and optionally (d) compds. which inhibit dissoln. of (a) in alkaline solution. The compns. work as pos. resists, show high sensitivity, and give good profile pattern by exposure with i-line, developing, and heating.

ST pos resist alkali sol polyhydroxyamide **photoacid** generator acyloxymethylphenol

IT Polyethers, preparation  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-, fluorine-containing; pos.-working resists containing poly(hydroxyamides), **photoacid** generators, and (acyloxymethyl)phenols)

IT Fluoropolymers, preparation  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-polyether-, fluorine-containing; pos.-working resists containing poly(hydroxyamides), **photoacid** generators, and (acyloxymethyl)phenols)

IT Polyamides, preparation  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-, fluorine-containing; pos.-working resists containing poly(hydroxyamides), **photoacid** generators, and (acyloxymethyl)phenols)

IT Dielectric films  
Positive **photoresists**  
(pos.-working resists containing poly(hydroxyamides), **photoacid** generators, and (acyloxymethyl)phenols)

IT Polybenzoxazoles  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos.-working resists containing poly(hydroxyamides), **photoacid** generators, and (acyloxymethyl)phenols)

IT Resists  
(pos.-working; pos.-working resists containing poly(hydroxyamides), **photoacid** generators, and (acyloxymethyl)phenols)

IT Semiconductor devices  
(surface protective films and interlayer insulating film for; pos.-working resists containing poly(hydroxyamides), **photoacid** generators, and (acyloxymethyl)phenols)

IT 722-56-5, Diphenyliodonium nitrate  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(dissoln. inhibitor; pos.-working resists containing poly(hydroxyamides), **photoacid** generators, and (acyloxymethyl)phenols)

IT 238091-14-0P, Tris(4-hydroxyphenyl)methane naphthoquinone-1,2-diazide-4-sulfonate  
RL: CAT (Catalyst use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos.-working resists containing poly(hydroxyamides), **photoacid** generators, and (acyloxymethyl)phenols)

IT 435345-99-6, Bis(2-hydroxy-3-acetoxymethyl-5-methylphenyl)methane  
435346-00-2, Bis(2-hydroxy-3-ethylcarbonyloxymethyl-5-methylphenyl)methane  
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)  
(pos.-working resists containing poly(hydroxyamides), **photoacid** generators, and (acyloxymethyl)phenols)

IT 112480-82-7P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-dicarboxydiphenyl ether dichloride copolymer, polyamide sru  
133440-72-9P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-dicarboxydiphenyl ether dichloride copolymer  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos.-working resists containing poly(hydroxyamides), **photoacid**

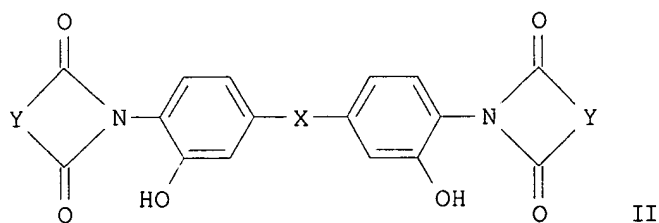
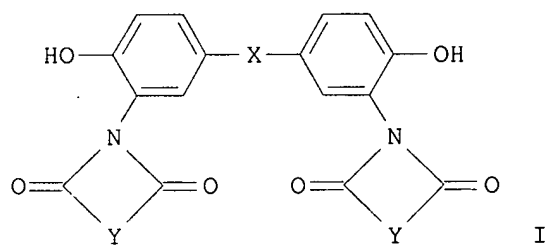
generators, and (acyloxymethyl)phenols)  
 IT 603-44-1, Tris(4-hydroxyphenyl)methane  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (pos.-working resists containing poly(hydroxyamides), **photoacid**  
 generators, and (acyloxymethyl)phenols)  
 L9 ANSWER 33 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:235924 CAPLUS  
 DN 136:286588  
 ED Entered STN: 28 Mar 2002  
 TI Imidophenols for positive **photoresists** with good sensitivity and  
 contrast patterning  
 IN Sasaki, Takahiro; Kataoka, Yasuhiro  
 PA Asahi Chemical Industry Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 10 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C07D209-76  
 ICS G03F007-004; G03F007-022; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 37, 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002088066	A2	20020327	JP 2000-280051	20000914
PRAI	JP 2000-280051		20000914		

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002088066	ICM	C07D209-76
	ICS	G03F007-004; G03F007-022; H01L021-027
	IPCI	C07D0209-76 [ICM,7]; G03F0007-004 [ICS,7]; G03F0007-022 [ICS,7]; H01L0021-027 [ICS,7]

GI



AB The imidophenols especially useful for alkali-developing pos.  
**photoresist** are compds. I or II (X = SO<sub>2</sub>, O, S, CH<sub>2</sub>, C(CF<sub>3</sub>)<sub>2</sub>, CO,  
 CMe<sub>2</sub>, etc.; Y = divalent organic groups). Stirring 2,2-bis(3-amino-4-  
 hydroxyphenyl)hexafluoropropane (III) and 5-norbornene-2,3-dicarboxylic  
 acid at 1:2 mol ratio in THF and pyridine gave a corresponding imidophenol  
 in 86% yield. A copolymer of III and 4,4'-diphenyl ether-dicarboxylic  
 acid chloride was prepared, terminated with MeSO<sub>2</sub>Cl, and mixed (100 parts)  
 with naphthoquinonediazide IV (80% Q = naphthoquinonediazidosulfonyl, 20%

Q = H) 15, the imidophenol 10, and  $\gamma$ -butyrolactone 150 g, giving a composition showing good patterning contrast and alkali developability.

ST imidophenol pos **photoresist** sensitivity contrast patterning;  
norbornenedicarboxylic acid bisaminohydroxyphenylhexafluoropropane  
imidophenol soly enhancer **photoresist**

IT Polyimides, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluorine-containing; imidophenols for pos. **photoresists** with  
good sensitivity and contrast patterning)

IT Phenols, preparation  
RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP  
(Preparation); USES (Uses)  
(imido-, solubility enhancer; imidophenols for pos. **photoresists**  
with good sensitivity and contrast patterning)

IT Positive **photoresists**  
(imidophenols for pos. **photoresists** with good sensitivity and  
contrast patterning)

IT Polyethers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-, fluorine-containing; imidophenols for pos.  
**photoresists** with good sensitivity and contrast patterning)

IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-polyether-; imidophenols for pos. **photoresists**  
with good sensitivity and contrast patterning)

IT Polyamides, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-, fluorine-containing; imidophenols for pos.  
**photoresists** with good sensitivity and contrast patterning)

IT Fluoropolymers, preparation  
Polyketones  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyimide-; imidophenols for pos. **photoresists** with good  
sensitivity and contrast patterning)

IT Polyimides, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyketone-; imidophenols for pos. **photoresists** with good  
sensitivity and contrast patterning)

IT 405506-81-2P  
RL: IMF (Industrial manufacture); NUU (Other use, unclassified); PREP  
(Preparation); USES (Uses)  
(alkali solubility enhancer; imidophenols for pos. **photoresists**  
with good sensitivity and contrast patterning)

IT 124-63-0DP, Methanesulfonyl chloride, reaction product with hydroxy  
polyamides 25464-66-8P, Benzophenonetetracarboxylic acid  
dianhydride-m-phenylenediamine copolymer 25868-65-9P,  
Benzophenonetetracarboxylic acid dianhydride-m-phenylenediamine copolymer,  
sru 112480-82-7DP, terminated with imidophenol monoamine derivs.  
112480-82-7DP, terminated with methanesulfonyl chloride  
133440-72-9DP, terminated with imidophenol monoamine derivs.  
133440-72-9DP, terminated with methanesulfonyl chloride 405506-80-1DP,  
reaction product with hydroxy polyamides  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(imidophenols for pos. **photoresists** with good sensitivity and  
contrast patterning)

IT 3813-52-3, 5-Norbornene-2,3-dicarboxylic acid 83558-87-6,  
2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(imidophenols for pos. **photoresists** with good sensitivity and  
contrast patterning)

AN 2002:140842 CAPLUS  
DN 136:295472  
ED Entered STN: 22 Feb 2002  
TI Preparation and properties of the nano-crystal and polymer composite film  
BIT/PEK-c with low scattering loss  
AU Ren, Q.; Chow, Y. T.; Xu, D.; Yang, X. D.; Wang, S. W.; Meng, F. Q.; Lu,  
Z. H.; Gambling, W. A.  
CS Department of Optics, Shandong University, Jinan, 250100, Peop. Rep. China  
SO Journal of Materials Science Letters (2001), 20(22), 2081-2083  
CODEN: JMSLD5; ISSN: 0261-8028  
PB Kluwer Academic Publishers  
DT Journal  
LA English  
CC 37-5 (Plastics Manufacture and Processing)  
Section cross-reference(s): 73, 78  
AB Nanocryst. Bi titanate Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub> (BIT) was synthesized by chemical solution  
decomposition technique from Bi(NO<sub>3</sub>)<sub>3</sub>·5H<sub>2</sub>O and Ti(OC<sub>4</sub>H<sub>9</sub>)<sub>4</sub>. The nano-crystals  
of BIT were analyzed by x-ray diffraction and transmission electron  
microscopy. Composite thin films of BIT and a transparent polyetherketone  
(PEK-c) were prepared by spin coating method. The surface of BIT/PEK-c was  
observed by atomic force microscopy. The values of refractive index and  
thickness of the film were determined by the quasi-waveguide coupling m-line  
method. The loss due to scattering in the BIT/PEK-c composite film was  
measured using **photog.** technique.  
ST titanium bismuth oxide prepn microstructure; bismuth titanate  
polyetherketone composite prepn electrooptical property  
IT Polyketones  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(polyether-; preparation and properties of crystalline bismuth titanate and its  
composites with transparent polyetherketone)  
IT Polyethers, properties  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(polyketone-; preparation and properties of crystalline bismuth titanate and its  
composites with transparent polyetherketone)  
IT Electrooptical effect  
Microstructure  
Refractive index  
(preparation and properties of crystalline bismuth titanate)  
IT 5593-70-4 10035-06-0  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation and properties of crystalline bismuth titanate)  
IT 12010-77-4P, Bismuth titanate Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>  
RL: MOA (Modifier or additive use); PRP (Properties); SPN (Synthetic  
preparation); PREP (Preparation); USES (Uses)  
(preparation and properties of crystalline bismuth titanate and its composites  
with transparent polyetherketone)  
IT **27380-27-4**, PEK  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(preparation and properties of crystalline bismuth titanate and its composites  
with transparent polyetherketone)  
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE  
(1) Joshi, P; Appl Phys Lett 1991, V59(19), P2389 CAPLUS  
(2) Okamura, Y; Appl Opt 1983, V22(23), P3892 CAPLUS  
(3) Scott, J; Science 1995, V267(31), P1918

L9 ANSWER 35 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2002:118400 CAPLUS  
DN 136:341268  
ED Entered STN: 15 Feb 2002  
TI Optical transmittance of polybenzoxazole precursor  
AU Kim, Dae Kyom; Kim, Jong Wha; Choi, Kil-Yeong; Oh, Jae-Min; Lee,  
Moo-Young; Park, Dong-Won; Lee, Kwang-Sup; Jin, Moon Young  
CS Advanced Material Div., Korea Research Institute of Chemical Technology,  
Taejeon, S. Korea  
SO Polymer (Korea) (2002), 26(1), 18-27  
CODEN: POLLDG; ISSN: 0379-153X  
PB Polymer Society of Korea  
DT Journal

LA Korean

CC 36-5 (Physical Properties of Synthetic High Polymers)

AB Poly(o-hydroxyamides) as polybenzoxazoles precursors were synthesized by polycondensation of 2,2'-bis(3-amino-4-hydroxyphenyl)hexafluoropropane and various diacids. The polymers were modified to acid-sensitive polyamides by introducing tetrahydropyran in order to impart **photosensitivity**. A study of optical transmittance at 365 nm, according to the chemical structure of diacid, revealed that the polymer derived from 4,4'-oxydibenzoic acid showed better optical transparency than those from other diacids. This tendency of optical transmittance could be explained by formation of charge transfer complex. For the polymer derived from 4,4'-oxydibenzoic acid, the electron accepting characteristics of diacid is reduced by introduction of electron donating group -O-. Thus, optical transmittance increased due to the diminished formation of intramol. charge transfer complex. In addition, the optical transmittance increased with increasing the THP content in the polymer. This is attributed to the reduced intermol. interaction by the loosening of the packing d. of the polymer chain.

ST aminohydroxyphenylhexafluoropropane diacid polybenzoxazole precursor optical transmittance

IT Polyamides, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (fluorine-containing; preparation and optical transmittance of poly(hydroxyamides) as polybenzoxazoles precursors)

IT Polyethers, preparation  
 Polysulfones, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyamide-, fluorine-containing; preparation and optical transmittance of poly(hydroxyamides) as polybenzoxazoles precursors)

IT Fluoropolymers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyamide-; preparation and optical transmittance of poly(hydroxyamides) as polybenzoxazoles precursors)

IT Fluoropolymers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyamide-polyether-; preparation and optical transmittance of poly(hydroxyamides) as polybenzoxazoles precursors)

IT Fluoropolymers, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyamide-polysulfone-; preparation and optical transmittance of poly(hydroxyamides) as polybenzoxazoles precursors)

IT Polyamides, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polyether-, fluorine-containing; preparation and optical transmittance of poly(hydroxyamides) as polybenzoxazoles precursors)

IT Polyamides, preparation  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (polysulfone-, fluorine-containing; preparation and optical transmittance of poly(hydroxyamides) as polybenzoxazoles precursors)

IT Optical transmission  
 (preparation and optical transmittance of poly(hydroxyamides) as polybenzoxazoles precursors)

IT Polybenzoxazoles  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and optical transmittance of poly(hydroxyamides) as polybenzoxazoles precursors)

IT 110-87-2DP, 3,4-Dihydro-2H-pyran, reaction products with polyhydroxamides  
 112492-59-8DP, 2,2'-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthaloyl chloride copolymer, reaction products with dihydropyran  
 113339-21-2DP, 2,2'-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthaloyl chloride copolymer, polyamide sru, reaction products with dihydropyran  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and characterization of)

IT **112480-82-7P** 112492-59-8P 112513-26-5P 113339-21-2P  
 113716-09-9P 133440-72-9P 243133-22-4P 417705-21-6P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and optical transmittance of poly(hydroxyamides) as polybenzoxazoles precursors)

IT 99-63-8P, Isophthaloyl chloride 1102-92-7P, 2,2-Bis(4-chlorocarbonylphenyl)hexafluoropropane 7158-32-9P, 4,4'-Oxydibenzoyl chloride 14387-35-0P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and polymerization with bis(aminohydroxyphenyl)hexafluoropropane)

L9 ANSWER 36 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:35841 CAPLUS

DN 136:103176

ED Entered STN: 15 Jan 2002

TI **Photo**-sensitive polybenzoxazole precursor resins and alkali-developable compositions useful for lithographic patterning containing them

IN Kaneda, Takayuki; Kimura, Masashi; Kanaya, Ryuichiro

PA Asahi Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08G073-22

ICS C08K005-00; C08L079-06; G03F007-038; G03F007-40; H01L021-027

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 74, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002012665	A2	20020115	JP 2000-335097	20001101
PRAI	JP 2000-130480	A	20000428		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002012665	ICM	C08G073-22
	ICS	C08K005-00; C08L079-06; G03F007-038; G03F007-40; H01L021-027
	IPCI	C08G0073-22 [ICM,7]; C08K0005-00 [ICS,7]; C08L0079-06 [ICS,7]; G03F0007-038 [ICS,7]; G03F0007-40 [ICS,7]; H01L0021-027 [ICS,7]

AB The resins are obtained from the reaction products of a polyamide bearing OH groups partially with OCN(CH<sub>2</sub>)<sub>m</sub>OCOC(R<sub>1</sub>):CR<sub>2</sub>R<sub>3</sub> (R<sub>1</sub>-3 = H, C1-3 aliphatic groups; m = 2-10), and used in compns. containing **photoinitiators**, crosslinkers and diluents for neg.-working **photoresists** in patterning of semiconductor devices. Thus, condensing 2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane with 4,4'-diphenyl ether dicarboxylic acid dichloride, end-blocking the resulting polyamide with phthalic anhydride, purifying, and reacting the blocked product with 2-isocyanatoethyl methacrylate (at an amount equivalent to 40 mol% of OH groups on the product) gave a polybenzoxazole precursor 100 parts of which was combined with tetraethylene glycol dimethacrylate 40, 1-phenyl-propanedione-2-(o-benzoyl) oxime 6, Michler's ketone 2, 3-aminopropyltrimethoxysilane 6, N-nitrosodiphenylamine 0.1 and N-methyl-2-pyrrolidone 230 parts to give a neg.-working **photoresist** with good light curability and developing property by alkali.

ST neg working **photoresist** hydroxy polyamide isocyanatoethyl methacrylate modified resin; semiconductor device lithog patterning acrylic hydroxy polyamide polybenzoxazole precursor

IT Polyethers, preparation

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic-polyamide-, fluorine-containing; **photo**-sensitive polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

IT Fluoropolymers, preparation

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(acrylic-polyamide-polyether-; **photo**-sensitive polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic-polybenzoxazole-, fluorine-containing; **photo-sensitive** polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

IT Fluoropolymers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic-polybenzoxazole-polyether-; **photo-sensitive** polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

IT Polybenzoxazoles  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic-polyether-, fluorine-containing; **photo-sensitive** polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

IT Polyamides, preparation  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (acrylic-polyether-, fluorine-containing; **photo-sensitive** polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

IT Dielectric films  
**Photoresists**  
 Semiconductor device fabrication  
 (**photo-sensitive** polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

IT Acrylic polymers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polybenzoxazole-polyether-, fluorine-containing; **photo-sensitive** polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

IT 389104-92-1DP, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer 2-isocyanatoethyl methacrylate ester-tetraethylene glycol dimethacrylate copolymer, reaction products with termination acids 389104-92-1P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer 2-isocyanatoethyl methacrylate ester-tetraethylene glycol dimethacrylate copolymer 389104-93-2DP, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer 2-isocyanatoethyl methacrylate ester-N,N'-di(2-methacryloxyethyl)urea copolymer, reaction products with termination acids 389104-94-3P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer 2-isocyanatoethyl methacrylate ester-N,N'-di(2-methacryloxyethyl)urea-tetraethylene glycol dimethacrylate copolymer  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (**photo-sensitive** polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

IT 389104-83-0P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer polyamide sru, phthalic anhydride-terminated, ester with 2-isocyanatoethyl methacrylate 389104-84-1P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer polyamide sru, terminated with methanesulfonyl chloride, carbamate ester with 2-isocyanatoethyl methacrylate 389104-85-2P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer polyamide sru, terminated with p-toluenesulfonyl chloride, carbamate ester with 2-isocyanatoethyl methacrylate 389104-86-3P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-



diphenyl ether dicarboxylic acid dichloride copolymer polyamide sru, terminated with 5-norbornene-2,3-dicarboxylic anhydride, carbamate ester with 2-isocyanatoethyl methacrylate 389104-87-4P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer polyamide sru, terminated with glutaric anhydride, carbamate ester with 2-isocyanatoethyl methacrylate 389104-89-6P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer polyamide sru, terminated with di-tert-butyl carbonate, carbamate ester with 2-isocyanatoethyl methacrylate 389104-90-9P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer polyamide sru, carbamate ester with 2-isocyanatoethyl methacrylate 389104-95-4P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer polyamide sru, terminated with cyclohexane-1,2-dicarboxylic anhydride, carbamate ester with 2-isocyanatoethyl methacrylate

RL: IMF (Industrial manufacture); POF (Polymer in formulation); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(photo-sensitive polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

IT 112480-82-7P 133440-72-9DP, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid dichloride copolymer, reaction products with termination acids  
389077-92-3P 389077-94-5P 389077-95-6P 389077-97-8P 389077-99-0P  
389078-01-7P 389078-02-8P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(photo-sensitive polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

IT 17322-98-4

RL: CAT (Catalyst use); USES (Uses)

(photoinitiators; photo-sensitive polybenzoxazole precursor resins and alkali-developable compns. useful for lithog. patterning containing them)

L9 ANSWER 37 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:855785 CAPLUS

DN 136:12827

ED Entered STN: 27 Nov 2001

TI Hydroxy polyamide and positively-working photosensitive composition containing it

IN Kataoka, Yasuhiro; Sasaki, Takahiro

PA Asahi Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08G069-26

ICS C08K005-28; C08L077-06; G03F007-022; G03F007-037

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 37, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001329061	A2	20011127	JP 2000-176059	20000612
PRAI	JP 2000-69828	A	20000314		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2001329061	ICM	C08G069-26
	ICS	C08K005-28; C08L077-06; G03F007-022; G03F007-037
	IPC	C08G0069-26 [ICM,7]; C08K0005-28 [ICS,7]; C08L0077-06 [ICS,7]; G03F0007-022 [ICS,7]; G03F0007-037 [ICS,7]

AB The composition contains 100 weight parts hydroxy polyamide X5[NHX1(OH)2NHCOX2CO]a(NHX3NHCOX4CO)bNHX1(OH)2NHx5 [X1 = 1,2,4,5-C6H2, C6H3A1C6H3; X2, X4 = C6H4, C6H4A2C6H4; A1, A2 = single bond, O C(CF3)2, CO, SO2; X3 = divalent organic group; ≥40 mol% of x5 = COYCO2H; Y =

saturated alicyclic group] and 1-50 weight parts **photosensitive** quinone diazide compound The composition shows good pattern-forming property and is useful for a semiconductor surface protective film, interlayer insulator film, etc.

ST polyamide hydroxy pos working **photosensitive** compn;  
semiconductor film **photosensitive** hydroxy polyamide

IT Polyethers, preparation  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-, fluorine- and hydroxy-containing; pos.-working **photosensitive** composition containing hydroxy polyamide and quinone diazide)

IT Fluoropolymers, preparation  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-polyether-, hydroxy-containing; pos.-working **photosensitive** composition containing hydroxy polyamide and quinone diazide)

IT Polyamides, preparation  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-, fluorine- and hydroxy-containing; pos.-working **photosensitive** composition containing hydroxy polyamide and quinone diazide)

IT Positive **photoresists**  
(pos.-working **photosensitive** composition containing hydroxy polyamide and quinone diazide)

IT Semiconductor devices  
(pos.-working **photosensitive** composition containing hydroxy polyamide and quinone diazide for)

IT 85-42-7DP, 1,2-Cyclohexanedicarboxylic acid anhydride, reaction products with hydroxy polyamide 5442-12-6DP, reaction products with hydroxy polyamide 6004-79-1DP, reaction products with hydroxy polyamide 19438-60-9DP, reaction products with hydroxy polyamide 112480-82-7DP, reaction products with alicyclic dicarboxylic anhydride 133440-72-9DP, reaction products with alicyclic dicarboxylic anhydride 257280-04-9DP, reaction products with alicyclic dicarboxylic anhydride  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos.-working **photosensitive** composition containing hydroxy polyamide and quinone diazide)

IT 135668-77-8 335159-38-1  
RL: TEM (Technical or engineered material use); USES (Uses)  
(pos.-working **photosensitive** composition containing hydroxy polyamide and quinone diazide)

L9 ANSWER 38 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:814261 CAPLUS

DN 135:365507

ED Entered STN: 09 Nov 2001

TI Positive-working polyamide-containing **photosensitive** polymer composition, its pattern formation, and electronic parts

IN Oe, Tadayuki; Nunomura, Masataka; Sasaki, Mamoru; Anzai, Takanori; Fujieda, Nagatoshi

PA Hitachi Chemical Du Pont Micro System Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 12 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-037

ICS C08G069-26; C08K005-00; C08K005-03; C08K005-13; C08L077-06;  
G03F007-004; G03F007-022; H01L021-312

CC 76-14 (Electric Phenomena)

Section cross-reference(s): 38, 74

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001312063	A2	20011109	JP 2000-131739	20000428

PI

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2001312063	ICM	G03F007-037
	ICS	C08G069-26; C08K005-00; C08K005-03; C08K005-13; C08L077-06; G03F007-004; G03F007-022; H01L021-312
	IPCI	G03F0007-037 [ICM,7]; C08G0069-26 [ICS,7]; C08K0005-00 [ICS,7]; C08K0005-03 [ICS,7]; C08K0005-13 [ICS,7]; C08L0077-06 [ICS,7]; G03F0007-004 [ICS,7]; G03F0007-022 [ICS,7]; H01L0021-312 [ICS,7]

OS MARPAT 135:365507

AB The **photosensitive** polymer composition contains a polyhydroxyamide having a repeating unit (NHU(OH)2NHC(O)VCO) (U = tetravalent organic group, V = divalent organic group), a compound generating an acid upon light irradiation, and a compound having an alkoxymethyl group and a phenolic OH group. The composition applied and dried on a substrate is image-wise exposed with light, developed, and heated to form a pattern. An electronic parts contains the pattern as a surface protective film or an interlayer insulating film. The **photosensitive** composition shows high sensitivity and gives high-resolution pattern without generation of scum. Thus, a **photosensitive** composition containing 2,2-bis(3-amino-4-hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane-4,4'-dicarboxy di-Ph ether dichloride copolymer and bis(2-hydroxy-3-methoxymethyl-5-methylphenyl) methane was applied on a substrate and patterned, and heated to give a polybenzoxazole film.

ST pos **photosensitive** compn polyhydroxyamide alkali sol; polyamide  
pos **photoimaging** compn patterning heating; polybenzoxazole film  
prepn pos **photosensitive** polymer compn; elec circuit pos  
**photosensitive** polyamide compn; interlayer insulator  
polybenzoxazole prep **photosensitive** polyamide compn; surface  
coating polybenzoxazole prep **photosensitive** polyamide compn;  
fluoropolymer polyhydroxyamide pos **photosensitive** compn

IT Polyamides, uses  
RL: PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent);  
USES (Uses)  
(fluorine-containing, in **photosensitive** composition; pos.-working polyhydroxyamide-containing **photosensitive** polymer composition and its patterning, and electronic parts)

IT Polybenzoxazoles  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(fluorine-containing; pos.-working polyhydroxyamide-containing **photosensitive** polymer composition and its patterning, and electronic parts)

IT Fluoropolymers, uses  
RL: PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent);  
USES (Uses)  
(polyamide-, in **photosensitive** composition; pos.-working polyhydroxyamide-containing **photosensitive** polymer composition and its patterning, and electronic parts)

IT Fluoropolymers, uses  
RL: DEV (Device component use); IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-; pos.-working polyhydroxyamide-containing **photosensitive** polymer composition and its patterning, and electronic parts)

IT Polyamides, uses  
RL: PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent);  
USES (Uses)  
(polyhydroxyamide, in **photosensitive** composition; pos.-working polyhydroxyamide-containing **photosensitive** polymer composition and its patterning, and electronic parts)

IT Coating materials  
Dielectric films  
(polymer; pos.-working polyhydroxyamide-containing **photosensitive**

polymer composition and its patterning, and electronic parts)

IT Electric circuits  
**Photoimaging materials**  
(pos.-working polyhydroxyamide-containing **photosensitive** polymer composition and its patterning, and electronic parts)

IT **112480-82-7P**  
RL: PNU (Preparation, unclassified); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(in **photosensitive** composition; pos.-working polyhydroxyamide-containing **photosensitive** polymer composition and its patterning, and electronic parts)

IT 173736-46-4 372162-72-6  
RL: TEM (Technical or engineered material use); USES (Uses)  
(in **photosensitive** composition; pos.-working polyhydroxyamide-containing **photosensitive** polymer composition and its patterning, and electronic parts)

IT 133440-72-9P  
RL: DEV (Device component use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos.-working polyhydroxyamide-containing **photosensitive** polymer composition and its patterning, and electronic parts)

L9 ANSWER 39 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2001:737271 CAPLUS  
DN 135:310905  
ED Entered STN: 10 Oct 2001  
TI **Photosensitive** resin composition containing polybenzoxazole precursor, manufacture of pattern, and semiconductor device  
IN Sasaki, Akihiro  
PA Hitachi Chemical Du Pont Micro System Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G03F007-037  
ICS C08G073-22; C08K005-00; C08L079-08; G03F007-004; G03F007-075; G03F007-40; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 35, 38, 76  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2001281858	A2	20011010	JP 2000-98908	20000331
PRAI JP 2000-98908		20000331		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2001281858	ICM	G03F007-037
	ICS	C08G073-22; C08K005-00; C08L079-08; G03F007-004; G03F007-075; G03F007-40; H01L021-027
	IPCI	G03F0007-037 [ICM,7]; C08G0073-22 [ICS,7]; C08K0005-00 [ICS,7]; C08L0079-08 [ICS,7]; G03F0007-004 [ICS,7]; G03F0007-075 [ICS,7]; G03F0007-40 [ICS,7]; H01L0021-027 [ICS,7]

AB The **photosensitive** resin composition comprises a polybenzoxazole precursor having a repeating unit I (A = tetravalent organic group having aromatic ring; and B = divalent group). An optical transmittance at 365 nm for a 10  $\mu$ m-thick film of I is  $\geq 1\%$ . The **photosensitive** resin composition is used for patterning of a film in manufacture of a semiconductor device.

ST **photoresist** compn polybenzoxazole precursor semiconductor devic fabrication

IT **Photoresists**  
Semiconductor device fabrication  
(**photoresist** composition containing polybenzoxazole precursor for semiconductor device fabrication)

IT Polybenzoxazoles

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
(**photoresist** composition containing polybenzoxazole precursor for semiconductor device fabrication)

IT Polyethers, processes

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
(polybenzoxazole-, fluorine-containing; **photoresist** composition containing polybenzoxazole precursor for semiconductor device fabrication)

IT Fluoropolymers, processes

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
(polybenzoxazole-polyether-; **photoresist** composition containing polybenzoxazole precursor for semiconductor device fabrication)

IT Polybenzoxazoles

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
(polyether-, fluorine-containing; **photoresist** composition containing polybenzoxazole precursor for semiconductor device fabrication)

IT 26010-71-9P 26041-85-0P **112480-82-7P** 112480-83-8P  
112492-60-1P 174407-76-2P 366008-65-3P 366008-68-6P 366008-69-7P  
366008-71-1P 366008-73-3P 366008-75-5P 366008-78-8P 366008-80-2P  
366008-82-4P

RL: PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
(**photoresist** composition containing polybenzoxazole precursor for semiconductor device fabrication)

L9 ANSWER 40 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:710297 CAPLUS

DN 135:275345

ED Entered STN: 28 Sep 2001

TI **Photoelectric** converters

IN Enomoto, Kazuhiro; Nunoi, Toru

PA Sharp Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01L031-04

ICS C08G065-40; C08K005-09; C08K007-18; C08L071-10

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001267597	A2	20010928	JP 2000-72759	20000315
PRAI	JP 2000-72759		20000315		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2001267597	ICM	H01L031-04
	ICS	C08G065-40; C08K005-09; C08K007-18; C08L071-10
	IPC	H01L0031-04 [ICM,7]; C08G0065-40 [ICS,7]; C08K0005-09 [ICS,7]; C08K0007-18 [ICS,7]; C08L0071-10 [ICS,7]

AB The **photoelec.** converters, useful for solar cells, have a substrate, a resin layer, a semiconductor layer, and electrode layers; wherein the resin layer contains a poly(aryl ether ketone). The poly(aryl ether ketone) is preferably [(OX)nCOC6H3R]q where n and q are integers, R = H, halogen, or a lower alkyl or alkoxy group, and X is a repeating unit of the same or different (substituted) C6-18 aromatic hydrocarbon entities. The resin layer may contain dispersed spherical inorg. compound particles.

ST **photoelec** converter polyaryl ether ketone layer; solar cell polyaryl ether ketone layer

IT **Photoelectric devices**  
(converters; light dispersing layers containing spherical inorg. particles dispersed in poly(aryl ether ketone) for **photoelec.** converters and solar cells)

IT **Solar cells**  
(light dispersing layers containing spherical inorg. particles dispersed in poly(aryl ether ketone) for **photoelec.** converters and solar cells)

IT 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 13463-67-7, Titania, uses 25718-32-5 **27380-27-4** 125467-25-6 363610-79-1  
RL: DEV (Device component use); USES (Uses)  
(light dispersing layers containing spherical inorg. particles dispersed in poly(aryl ether ketone) for **photoelec.** converters and solar cells)

L9 ANSWER 41 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 2001:651807 CAPLUS  
DN 136:6481  
ED Entered STN: 06 Sep 2001  
TI An ESR study of the gamma radiolysis of aromatic polyesters containing isomeric naphthalene links  
AU Hill, D. J. T.; Choi, B.-K.; Ahn, H.-K.; Choi, E.-J.  
CS Department of Chemistry, Centre for Magnetic Resonance, The University of Queensland, Polymer Materials and Radiation Group, Brisbane, 4072, Australia  
SO Radiation Physics and Chemistry (2001), 62(1), 195-201  
CODEN: RPCHDM; ISSN: 0969-806X  
PB Elsevier Science Ltd.  
DT Journal  
LA English  
CC 35-8 (Chemistry of Synthetic High Polymers)  
AB Six polyesters were synthesized from 4,4'-oxybis(benzoyl chloride) and 1,4-, 1,5-, 1,6-, 2,3-, 2,6-, and 2,7-naphthalenediol isomers. The structures of the polyesters were characterized by means of IR, inherent viscosities in tetrachloroethane (TCE), solns. at 303 K and thermal anal. The glass transition temps. were in the range of 425-494 K by DSC thermal anal. All of the polyesters were irradiated in an AECL Gammacell 220 unit at a dose rate of approx. 6.7 kGy/h to doses in the range of 0-15 kGy at 77 and 300 K. ESR spectroscopy was used to examine the radicals formed during radiolysis and to measure their yields. The G-values for radical formation in the polyesters were found to be in the range 0.18-1.41 at 77 K and 0.19-0.78 at 300 K. At 77 K, up to 15% of the radicals formed on radiolysis were found to be **photo**-bleachable anion radicals. Annealing expts. were carried out in order to identify the neutral radicals, which were assigned to naphthyl- or phenyl- and phenoxyl-type radicals.

ST oxybisbenzoyl chloride naphthalenediol polyester gamma radiolysis; ESR naphthalenediol polyester gamma radiolysis

IT Annealing  
(ESR study of gamma radiolysis of aromatic polyesters containing isomeric naphthalene links)

IT Polyesters, reactions  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
(aromatic; ESR study of gamma radiolysis of aromatic polyesters containing isomeric naphthalene links)

IT Polymer degradation  
(radiochem.; ESR study of gamma radiolysis of aromatic polyesters containing isomeric naphthalene links)

IT **108819-81-4 265097-38-9 265097-42-5**  
**265097-46-9** 265642-22-6 377087-13-3, 1,4-Naphthalenediol-4,4'-oxybis(benzoyl chloride) copolymer 377087-14-4 377087-15-5 377087-16-6 377087-17-7 377087-18-8 377087-19-9  
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)  
(ESR study of gamma radiolysis of)

RE

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- (3) Babanalbandi, A; Polym Degrad Stab 1995, V50, P297 CAPLUS
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- (11) Hill, D; Polymer Handbook, 3rd Edition 1989, PII
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L9 ANSWER 42 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:336595 CAPLUS

DN 134:359520

ED Entered STN: 11 May 2001

TI Negative-working **photoresist** composition containing polybenzoxazole precursor, pattern formation, and electronic device

IN Minegishi, Tomonori

PA Hitachi Chemical Du Pont Micro System Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-038

ICS C08G073-10; C08L079-08

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001125267	A2	20010511	JP 1999-309021	19991029
PRAI	JP 1999-309021		19991029		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2001125267	ICM	G03F007-038
	ICS	C08G073-10; C08L079-08
	IPCI	G03F0007-038 [ICM,7]; C08G0073-10 [ICS,7]; C08L0079-08 [ICS,7]

AB The composition comprises (A) a polyamide derivative COR1CONHR2(OH)2NH (I; R1 = divalent organic group; R2 = tetravalent organic group), (B) a compound generating an acid by radiation, and (C) a compound crosslinking I by the action of acid. The pattern is formed by coating and drying the composition on a substrate, exposing, and developing with alkali. The electronic device using the formed pattern as a surface protective layer or insulating layer is also claimed. The composition shows high sensitivity, resolution, and heat resistance and gives patterns with high accuracy.

ST neg **photoresist** polybenzoxazole precursor acid generator; polyamic acid crosslinking agent **photoresist**; semiconductor device fabrication **photoresist**

IT **Photoresists**  
(neg.-working **photoresist** composition containing polybenzoxazole precursor)

IT Polyamic acids  
Polyamides, preparation  
Polybenzoxazoles  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(neg.-working **photoresist** composition containing polybenzoxazole precursor)

IT Semiconductor device fabrication  
(neg.-working **photoresist** composition containing polybenzoxazole precursor for semiconductor device fabrication)

IT 137308-86-2  
RL: TEM (Technical or engineered material use); USES (Uses)

(acid generator; neg.-working **photoresist** composition containing polybenzoxazole precursor)

IT 13653-12-8 197087-73-3  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (crosslinking agent; neg.-working **photoresist** composition containing polybenzoxazole precursor)

IT 25821-44-7P 27026-23-9P **112480-82-7P** 112492-60-1P,  
 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-dicarboxydiphenyl ether copolymer 112492-61-2P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthalic acid copolymer 113339-21-2P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthalic acid copolymer, sru 113742-48-6P 123349-56-4P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthalic acid-terephthalic acid copolymer  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (neg.-working **photoresist** composition containing polybenzoxazole precursor)

L9 ANSWER 43 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2001:246653 CAPLUS

DN 134:267410

ED Entered STN: 06 Apr 2001

TI Positive type **photosensitive** resin composition, process for producing pattern and electronic parts

IN Minegishi, Tomonori; Kaji, Makoto

PA Hitachi Chemical Dupont Microsystems Ltd., Japan

SO Eur. Pat. Appl., 22 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM G03F007-004

ICS G03F007-038

CC 38-3 (Plastics Fabrication and Uses)

Section cross-reference(s): 74, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1089129	A1	20010404	EP 2000-120169	20000922
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001166484	A2	20010622	JP 2000-237798	20000804
	US 6436593	B1	20020820	US 2000-666541	20000921
	TW 554244	B	20030921	TW 2000-89119574	20000922
PRAI	JP 1999-274985	A	19990928		
	JP 1999-274986	A	19990928		
	JP 2000-237798	A	20000804		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1089129	ICM	G03F007-004
	ICS	G03F007-038
	IPCI	G03F0007-004 [ICM,6]; G03F0007-038 [ICS,6]
	ECLA	G03F007/039
JP 2001166484	IPCI	G03F0007-039 [ICM,7]; C08G0073-06 [ICS,7]; C08K0005-00 [ICS,7]; C08L0079-04 [ICS,7]; G03F0007-075 [ICS,7]; H01L0021-027 [ICS,7]; H01L0021-312 [ICS,7]
US 6436593	IPCI	G03F0007-021 [ICM,7]; G03F0007-023 [ICS,7]; G03F0007-039 [ICS,7]; G03F0007-30 [ICS,7]
	IPCR	G03F0007-004 [N,A]; G03F0007-004 [N,C]; G03F0007-038 [N,A]; G03F0007-038 [N,C]; G03F0007-039 [I,A]; G03F0007-039 [I,C]; H05K0003-00 [N,A]; H05K0003-00 [N,C]; H05K0003-46 [N,A]; H05K0003-46 [N,C]
	NCL	430/018.000; 430/176.000; 430/189.000; 430/270.100; 430/326.000; 430/906.000
	ECLA	G03F007/039
TW 554244	IPCI	G03F0007-004 [ICM,7]; G03F0007-038 [ICS,7]

AB Disclosed are a pos. type **photosensitive** resin composition which comprises (A) a polyimide precursor or a polyoxazole precursor having a



group represented by -OR, wherein R represents a monovalent group constituting an acetal or ketal, an alkoxyalkyl group or an alkylsilyl group, which can be converted into a hydrogen atom by decomposition with an action of an acid, in the mol. which is bonded to an aromatic ring, and (B) a compound which generates an acid by irradiating radiation. Electronic parts using the composition have good heat resistance. Thus, esterifying 3,3',4,4'-diphenyl ether tetracarboxylic dianhydride with i-PrOH, converting the (partially) esterified product to acid chloride using SOCl<sub>2</sub>, condensing the resulting product with 2,2-bis(3-amino-4-hydroxyphenyl)hexafluoropropane, and protecting the phenolic OH groups of the polyamic acid with 2,3-dihydropyran gave a polyimide precursor which was combined with dimethoxyanthracenesulfonic acid di-Ph iodonium and 2-methoxyethanol to give a pos.-working **photoresist**.

- ST **photoresist** semiconductor patterning polyimide precursor acetal protection group; polyoxazole precursor acetal protection group **photoresist**
- IT Sulfonium compounds  
 RL: CAT (Catalyst use); USES (Uses)  
 (acid generator; pos. type **photosensitive** resin composition, process for producing pattern and electronic parts)
- IT Polyamic acids  
 Polyimides, uses  
 RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (fluorine-containing; pos. type **photosensitive** resin composition, process for producing pattern and electronic parts)
- IT Fluoropolymers, uses  
 RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (polyamic acid-; pos. type **photosensitive** resin composition, process for producing pattern and electronic parts)
- IT Fluoropolymers, uses  
 RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (polyimide-; pos. type **photosensitive** resin composition, process for producing pattern and electronic parts)
- IT **Photoresists**  
 Semiconductor device fabrication  
 (pos. type **photosensitive** resin composition, process for producing pattern and electronic parts)
- IT Polybenzoxazoles  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (pos. type **photosensitive** resin composition, process for producing pattern and electronic parts)
- IT 41580-58-9, Phthalimidyl triflate 85342-62-7 137308-86-2  
 RL: CAT (Catalyst use); USES (Uses)  
 (acid generator; pos. type **photosensitive** resin composition, process for producing pattern and electronic parts)
- IT 75-59-2, Tetramethylammonium hydroxide  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (developer; pos. type **photosensitive** resin composition, process for producing pattern and electronic parts)
- IT 25868-24-0DP, 4,4'-Diamino-3,3'-dihydroxybiphenyl; 4,4'-oxybisbenzoyl chloride copolymer sru, partially esterified, protected product 27026-23-9DP, 4,4'-Diamino-3,3'-dihydroxybiphenyl; 4,4'-oxybisbenzoyl chloride copolymer polyamic acid sru, partially esterified, protected product 27056-67-3DP, 4,4'-Diamino-3,3'-dihydroxybiphenyl; 4,4'-oxybisbenzoyl chloride copolymer, partially esterified, protected product 112480-78-1DP, 2,2-Bis(3-amino-4-hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane-isophthaloyl chloride copolymer sru, partially esterified, protected product **112480-82-7DP**, 2,2-Bis(3-amino-4-hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane-4,4'-oxybisbenzoyl chloride copolymer polyamic acid sru, partially esterified, protected product 112480-83-8DP, 2,2-Bis(3-amino-4-hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane-4,4'-oxybisbenzoyl chloride copolymer,

polybenzoxazole SRU, partially esterified, protected product  
112492-59-8DP, 2,2-Bis(3-amino-4-hydroxyphenyl)-1,1,1,3,3,3-  
hexafluoropropane-isophthaloyl chloride copolymer, partially esterified,  
protected product 113339-21-2DP, 2,2-Bis(3-amino-4-hydroxyphenyl)-  
1,1,1,3,3,3-hexafluoropropane-isophthaloyl chloride copolymer polyamic  
acid sru, partially esterified, protected product 113742-47-5DP,  
2,2-Bis(3-amino-4-hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane-  
isophthaloyl chloride-terephthaloyl chloride copolymer ID sru, partially  
esterified, protected product 113742-48-6DP, 2,2-Bis(3-amino-4-  
hydroxyphenyl)-1,1,1,3,3,3-hexafluoropropane-isophthaloyl  
chloride-terephthaloyl chloride copolymer, partially esterified, protected  
product 121333-86-6DP, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-  
3,3',4,4'-diphenyl ether tetracarboxylic dianhydride copolymer, partially  
esterified, protected product with dihydropyran 121334-09-6DP, partially  
esterified, protected product 121334-10-9DP, 2,2-Bis(3-amino-4-  
hydroxyphenyl)hexafluoropropane-3,3',4,4'-diphenyl ether tetracarboxylic  
dianhydride copolymer polyimide sru, partially esterified, protected  
product 122983-64-6DP, partially esterified, protected product  
133440-72-9DP, 2,2-Bis(3-amino-4-hydroxyphenyl)-1,1,1,3,3,3-  
hexafluoropropane-4,4'-oxybisbenzoyl chloride copolymer, partially  
esterified, protected product 148507-14-6DP, 2,2-Bis(3-amino-4-  
hydroxyphenyl)hexafluoropropane-2,2-bis(3,4-dicarboxyphenyl)hexafluoroprop  
ane copolymer, partially esterified, protected product 172520-37-5DP,  
2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-3,3',4,4'-diphenyl ether  
tetracarboxylic dianhydride copolymer polyamic acid sru, partially  
esterified, protected product

RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical  
process); PRP (Properties); TEM (Technical or engineered material use);  
PREP (Preparation); PROC (Process); USES (Uses)

(pos. type **photosensitive** resin composition, process for producing  
pattern and electronic parts)

IT 110-87-2

RL: MOA (Modifier or additive use); USES (Uses)

(protecting agents; pos. type **photosensitive** resin composition,  
process for producing pattern and electronic parts)

IT 67-63-0, 2-Propanol, uses 109-86-4, Methoxyethanol 18162-48-6,  
tert-Butyldimethylchlorosilane

RL: NUU (Other use, unclassified); USES (Uses)

(protection agents; pos. type **photosensitive** resin composition,  
process for producing pattern and electronic parts)

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (2) Arch Specialty Chemicals Inc; WO 0019273 A 2000 CAPLUS
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- (5) Hitachi Chemical Du Pont Microsystems Ltd; EP 1028354 A 2000 CAPLUS
- (6) Ibm Corporation; EP 0436457 A 1991 CAPLUS
- (7) Maeda; US 5449588 A 1995 CAPLUS
- (8) Naitoh, K; POLYMERS FOR ADVANCED TECHNOLOGIES 1993, V4(4), P294 CAPLUS
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L9 ANSWER 44 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:873341 CAPLUS

DN 134:29966

ED Entered STN: 13 Dec 2000

TI Silicon coupling agents for resin moldings at  $\geq 200^\circ$  and  
**photoresist** applications thereof

IN Takahashi, Hideaki; Kaneda, Takayuki

PA Asahi Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08K005-5455

ICS C08L079-04; C08L101-16; G03F007-075

CC 37-2 (Plastics Manufacture and Processing)

Section cross-reference(s): 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000344940	A2	20001212	JP 1999-314314	19991104
PRAI	JP 1999-90119	A	19990330		

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2000344940	ICM	C08K005-5455
	ICS	C08L079-04; C08L101-16; G03F007-075
	IPCI	C08K0005-5455 [ICM,7]; C08L0079-04 [ICS,7]; C08L0101-16 [ICS,7]; G03F0007-075 [ICS,7]

OS MARPAT 134:29966

AB The silicon coupling agents are represented by the general formula  $(R1O)nSi(R2)3-n(CH2)2R3NHCOR4$ , where R1, R2 = independently C1-4 alkyl; R3 = divalent organic group; R4 = NHR5 or OR6; R5, R6 = monovalent organic group not including COOH; and n = 1-3. Thus, a **photosensitive** composition comprising 3,3',4,4'-benzophenonetetracarboxylic acid dianhydride-4,4-bis(4-aminophenoxy)biphenyl-pyromellitic dianhydride copolymer 2-hydroxyethyl methacrylate ester (preparation given) 100, 1,3-diphenylpropanetrione-2-(o-ethoxycarbonyl)oxime (**photoinitiator**) 4, tetraethylene glycol dimethacrylate 12, N-phenyldiethanolamine (sensitizer) 3, and tert-BuOCONH(CH2)3Si(OEt)3 obtained from 132.8 g 3-aminopropyltriethoxysilane and 131.0 g di-tert-Bu dicarbonate (coupling agent) 5 parts and 150 g NMP was coated on a silicon wafer to give a 12  $\mu$ m-thick film, irradiated with i-ray, and developed to give a sharp pattern, which was heated at 140° for 1 h and at 300° for 1 h to give a 6  $\mu$ m-thick film showing good adhesion to the wafer.

ST silicon coupling agent prepn **photoresist**

IT Polyimides, preparation

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-polyether-; silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT Polyethers, preparation

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (acrylic-polyimide-; silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT Polyamic acids

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (esters; silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT Polyamides, preparation

Polybenzoxazoles

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (fluorine-containing; silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT Polyamides, preparation

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (hydroxy-containing; silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT Polyimides, preparation

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (iso-, polyether-, aromatic, fluorine-containing; silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT Polyimides, preparation

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (iso-, polyether-polyketone-, fluorine-containing; silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT Polyimides, preparation

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(isopolyimides; silicon coupling agent-containing **photoresist**  
comps. having good adhesion to substrates)

IT Polyethers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamic acid-; silicon coupling agent-containing **photoresist**  
comps. having good adhesion to substrates)

IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-; silicon coupling agent-containing **photoresist**  
comps. having good adhesion to substrates)

IT Polyethers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-, fluorine-containing; silicon coupling agent-containing  
**photoresist** comps. having good adhesion to substrates)

IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-; silicon coupling agent-containing **photoresist**  
comps. having good adhesion to substrates)

IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polybenzoxazole-polyether-; silicon coupling agent-containing  
**photoresist** comps. having good adhesion to substrates)

IT Polybenzoxazoles  
Polyimides, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-, fluorine-containing; silicon coupling agent-containing  
**photoresist** comps. having good adhesion to substrates)

IT Polyamic acids  
Polyimides, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-; silicon coupling agent-containing **photoresist**  
comps. having good adhesion to substrates)

IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-polyimide-; silicon coupling agent-containing  
**photoresist** comps. having good adhesion to substrates)

IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-polyisoimide-, aromatic; silicon coupling agent-containing  
**photoresist** comps. having good adhesion to substrates)

IT Polyketones  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-polyisoimide-, fluorine-containing; silicon coupling  
agent-containing **photoresist** comps. having good adhesion to  
substrates)

IT Fluoropolymers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-polyisoimide-polyketone-; silicon coupling agent-containing  
**photoresist** comps. having good adhesion to substrates)

IT Polyethers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyimide-, fluorine-containing; silicon coupling agent-containing  
**photoresist** comps. having good adhesion to substrates)

IT Polyethers, preparation  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES (Uses)

(polyimide-, silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyisoimide-, aromatic, fluorine-containing; silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT Polyoxyarylenes  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyisoimide-, fluorine-containing; silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT Polyethers, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyisoimide-polyketone-, fluorine-containing; silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT Coupling agents  
**Photoresists**  
 (silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT 103-71-9, Phenyl isocyanate, reactions 919-30-2, 3-Aminopropyltriethoxysilane 24424-99-5, Di-tert-butyl dicarbonate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (in preparation of silicon coupling agents useful for **photoresist**)

IT 3451-83-0P 137376-38-6P  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
 (preparation of silicon coupling agents useful for **photoresist**)

IT 124-63-0DP, Methanesulfonyl chloride, reaction product with hydroxypolyamides 707-80-2DP, reaction product with hydroxypolyamides 87182-96-5P, 2,2-Bis(4-(4-aminophenoxy)phenyl)hexafluoropropane-2,2-bis(3,4-dicarboxyphenyl)hexafluoropropane dianhydride copolymer 87186-94-5P 112480-78-1P **112480-82-7DP**, reaction product with norbornenedicarboxylic acid dichloride 112480-83-8P 112492-59-8DP, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthalic acid dichloride copolymer, reaction product with methanesulfonyl chloride 113339-21-2DP, reaction product with methanesulfonyl chloride 133440-72-9DP, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenylether dicarboxylic acid dichloride copolymer, reaction product with norbornenedicarboxylic acid dichloride 143549-35-3P 144244-91-7P 158484-86-7P 312310-25-1P  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT 142541-99-9  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

IT 7440-21-3, Silicon, miscellaneous  
 RL: MSC (Miscellaneous)  
 (substrate; silicon coupling agent-containing **photoresist** compns. having good adhesion to substrates)

L9 ANSWER 45 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2000:761991 CAPLUS  
 DN 133:327675  
 ED Entered STN: 31 Oct 2000  
 TI Aromatic hydroxy-substituted polyamide for positive-working polybenzoxazole **photoresist**  
 IN Kimura, Masashi; Takahashi, Hideaki  
 PA Asahi Chemical Industry Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08G069-32

ICS G03F007-037  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000302863	A2	20001031	JP 1999-113150	19990421
PRAI	JP 1999-113150		19990421		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2000302863	ICM	C08G069-32
	ICS	G03F007-037
	IPCI	C08G0069-32 [ICM,7]; G03F0007-037 [ICS,7]

AB The OH-substituted aromatic polyamide is represented as  
Z[NHR1(OH)2NHC(O)R2C(O)]nNHR1(OH)2NHZ (R1 = tetravalent aromatic group; R2 =  
divalent aromatic group; n = 2-150; ≥40 mol% of Z = Me3CO2, the rest  
of Z = monovalent organic group). The alkali-soluble resin as a pos.-working  
**photoresist** precursor shows storage stability (due to the  
NH-terminating group) and curability in wide range of temperature for giving  
heat-resistant polybenzoxazole and is suitable for an intermediate or  
surface-protecting film in a semiconductor device.

ST arom hydroxy substituted polyamide **photoresist** precursor; alkali  
sol polyamide heat resistant polybenzoxazole; pos working  
**photoresist** polybenzoxazole heat resistant; semiconductor device  
protecting film polybenzoxazole; amino terminating tertiary butyl carbonyl  
polyamide

IT Heat-resistant materials  
Positive **photoresists**  
Semiconductor device fabrication  
(hydroxy-substituted polyamide as **photoresist** precursor for  
forming heat-resistant polybenzoxazole film in semiconductor device)

IT Polybenzoxazoles  
RL: DEV (Device component use); USES (Uses)  
(hydroxy-substituted polyamide as **photoresist** precursor for  
forming heat-resistant polybenzoxazole film in semiconductor device)

IT Polyamides, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(hydroxy-substituted polyamide as **photoresist** precursor for  
forming heat-resistant polybenzoxazole film in semiconductor device)

IT 34619-03-9, Di(tert-butyl) carbonate  
RL: MSC (Miscellaneous)  
(for terminating amino group; for hydroxy-substituted polyamide as  
**photoresist** precursor for forming heat-resistant  
polybenzoxazole film in semiconductor device)

IT 112492-59-8P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-  
isophthaloyl dichloride copolymer 133440-72-9P  
RL: DEV (Device component use); IMF (Industrial manufacture); PRP  
(Properties); PREP (Preparation); USES (Uses)  
(hydroxy-substituted polyamide as **photoresist** precursor for  
forming heat-resistant polybenzoxazole film in semiconductor device)

IT **112480-82-7** 113339-21-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(hydroxy-substituted polyamide as **photoresist** precursor for  
forming heat-resistant polybenzoxazole film in semiconductor device)

L9 ANSWER 46 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:739611 CAPLUS

DN 133:303560

ED Entered STN: 20 Oct 2000

TI Positive-working **photosensitive** resin composition and pattern  
formation using same

IN Kaneda, Takayuki; Takahashi, Hideaki

PA Asahi Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-004  
ICS C08K005-136; C08K005-23; C08L077-10; G03F007-022; G03F007-037;  
G03F007-30; G03F007-40; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 38

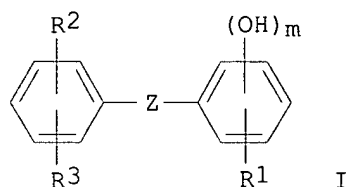
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000292913	A2	20001020	JP 1999-96910	19990402
PRAI	JP 1999-96910		19990402		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2000292913	ICM	G03F007-004
	ICS	C08K005-136; C08K005-23; C08L077-10; G03F007-022; G03F007-037; G03F007-30; G03F007-40; H01L021-027
	IPCI	G03F0007-004 [ICM,7]; C08K0005-136 [ICS,7]; C08K0005-23 [ICS,7]; C08L0077-10 [ICS,7]; G03F0007-022 [ICS,7]; G03F0007-037 [ICS,7]; G03F0007-30 [ICS,7]; G03F0007-40 [ICS,7]; H01L0021-027 [ICS,7]

OS MARPAT 133:303560  
GI



AB The title resin composition contains a polyamide [NHX(OH)2NHCOYCO]<sub>n</sub> (X = tetravalent aromatic group; Y = divalent aromatic group) 100, a phenol derivative I (m = 1-3; R<sup>1</sup>-3 = H, halo, alkyl, alkoxy, cycloalkyl; Z = single bond, CO, SO<sub>2</sub>, O, CH<sub>2</sub>, CMe<sub>2</sub>, CHPh) 1-30, and a **photosensitive** diazo-quinone compound 1-100 parts. The composition is coated on a substrate, pattern-wise exposed to activating radiation, and processed with a developing solution to remove the exposed portions followed by heat-treatment to form a heat-resistant relief pattern. The composition shows high **photosensitivity** and develop ability and provides high resolution patterns with high residual film rate.

ST pos **photoresist** hydroxy polyamide; phenolic compd  
**photoresist**; diazoquinone compd **photoresist**

IT **Photoresists**  
(**photoresist** composition containing polyamide, phenolic compound, and diazo-quinone compound)

IT Polybenzoxazoles  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**photoresist** composition containing polyamide, phenolic compound, and diazo-quinone compound)

IT **112480-82-7P** 112492-59-8P, 2,2-Bis(3-amino-4-hydroxyphenyl)-hexafluoropropane-isophthalic acid dichloride copolymer 113339-21-2P 113339-21-2P, 2,2-Bis(3-amino-4-hydroxyphenyl)-hexafluoropropane-isophthalic acid dichloride copolymer, sru 116325-73-6P 116325-77-0P 120470-69-1P, 2,2-Bis(3-amino-4-hydroxyphenyl)-hexafluoropropane-3,3'-dihydroxy-4,4'-diaminobiphenyl-isophthalic acid dichloride copolymer 133440-72-9P, 2,2-Bis(3-amino-4-hydroxyphenyl)-hexafluoropropane-4,4'-diphenylether dicarboxylic acid dichloride copolymer  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**photoresist** composition containing polyamide, phenolic compound, and diazo-quinone compound)

IT 92-69-3, 4-Hydroxybiphenyl 599-64-4 2284-30-2 17345-66-3

33834-33-2 142541-99-9

RL: TEM (Technical or engineered material use); USES (Uses)

(**photoresist** composition containing polyamide, phenolic compound, and diazo-quinone compound)

L9 ANSWER 47 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1999:763791 CAPLUS  
DN 132:28657  
ED Entered STN: 03 Dec 1999  
TI **Photosensitive** polymer composition for forming relief patterns  
for electronic part fabrication  
IN Nunomura, Masataka; Yamazaki, Noriyuki  
PA Hitachi Chemical Dupont Microsystems Ltd., Japan  
SO Eur. Pat. Appl., 17 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
IC ICM G03F007-023  
ICS G03F007-004  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)  
Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 961169	A1	19991201	EP 1999-109305	19990528
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2000241973	A2	20000908	JP 1999-86994	19990329
	JP 3509612	B2	20040322		
	US 6232032	B1	20010515	US 1999-321316	19990527
	US 2001009746	A1	20010726	US 2001-776925	20010206
	US 6365306	B2	20020402		
PRAI	JP 1998-149943	A	19980529		
	JP 1998-367183	A	19981224		
	JP 1999-86994	A	19990329		
	US 1999-321316	A3	19990527		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 961169	ICM	G03F007-023
	ICS	G03F007-004
	IPCI	G03F0007-023 [ICM,6]; G03F0007-004 [ICS,6]
	ECLA	G03F007/004D; G03F007/023P
JP 2000241973	IPCI	G03F0007-039 [ICM,7]; C08K0005-28 [ICS,7]; C08L0079-04 [ICS,7]; C08L0079-08 [ICS,7]; G03F0007-004 [ICS,7]; G03F0007-022 [ICS,7]; H01L0021-312 [ICS,7]
US 6232032	IPCI	G03F0007-023 [ICM,7]
	IPCR	G03F0007-004 [I,A]; G03F0007-004 [I,C]; G03F0007-023 [I,A]; G03F0007-023 [I,C]
	NCL	430/191.000; 430/192.000; 430/193.000; 430/270.100; 430/326.000
	ECLA	G03F007/004D; G03F007/023P
US 2001009746	IPCI	G03F0007-023 [ICM,7]; G03F0007-30 [ICS,7]; G03F0007-40 [ICS,7]
	IPCR	G03F0007-004 [I,A]; G03F0007-004 [I,C]; G03F0007-023 [I,A]; G03F0007-023 [I,C]
	NCL	430/018.000
	ECLA	G03F007/004D; G03F007/023P

AB The title composition which exhibits a sensitivity and provides relief patterns  
having a good profile comprises (a) a polymer soluble in an aqueous alkaline solution,  
(b) a quinonediazide compound, and (c) a dissoln. inhibitor for the polymer.

ST **photosensitive** compn alkali sol polymer relief pattern;  
**photofabrication photosensitive** compn alkali sol polymer

IT **Photoimaging** materials  
(containing alkali-soluble polymers, quinonediazide compds., and dissoln.  
inhibitors for relief pattern formation)

IT Electronics  
(**photosensitive** compns. containing alkali-soluble polymers and



quinonediazide compds. for relief pattern formation for fabrication of parts for)

IT 238091-14-0  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (**photosensitive** compns. for relief image formation containing alkali-soluble polymers, dissoln. inhibitors and)

IT 75-57-0, Tetramethylammonium chloride 722-56-5, Diphenyliodonium nitrate  
 23779-32-0 26763-63-3, Diphenylurea 66003-76-7, Diphenyliodonium trifluoromethanesulfonate 141339-54-0 146793-37-5, Diphenyliodonium 8-anilinonaphthalene-1-sulfonate  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (**photosensitive** compns. for relief image formation containing alkali-soluble polymers, quinonediazide compds. and)

IT 7158-32-9P 213608-87-8P 251650-61-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction in preparing alkali-soluble polymers for **photosensitive** compns. for relief image formation)

IT 112480-82-7P 133440-72-9P 251650-67-6P 251940-31-5P  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation and use in **photosensitive** compns. for relief image formation)

IT 71-36-3, Butyl alcohol, reactions 1823-59-2 2215-89-6, 4,4'-Diphenyl ether dicarboxylic acid 7719-09-7, Thionyl chloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction in preparing alkali-soluble polymers for **photosensitive** compns. for relief image formation)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Hitachi Chemical Co Ltd; EP 0810476 A 1997 CAPLUS
- (2) Nippon Kayaku Kk; JP 07219216 A 1995 CAPLUS
- (3) Oba, M; US 5753407 A 1998 CAPLUS
- (4) Sumitomo Bakelite Company Ltd; EP 0459395 A 1991 CAPLUS
- (5) Toshiba K K; JP 04204945 A 1992 CAPLUS

L9 ANSWER 48 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:587954 CAPLUS

DN 131:235736

ED Entered STN: 20 Sep 1999

TI Positively-working **photoimaging** polybenzoxazole precursor composition and the semiconductor device using the composition

IN Banba, Toshio; Hirano, Takashi; Takeda, Naoshige

PA Sumitomo Bakelite Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 23 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-037

ICS G03F007-022; G03F007-075; H01L021-027; C08G069-42

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

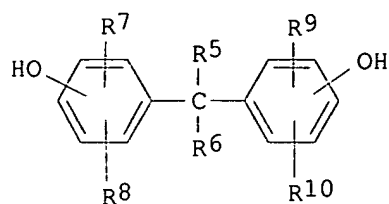
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11249306	A2	19990917	JP 1998-348666	19981208
	JP 3449933	B2	20030922		
PRAI	JP 1997-339055	A	19971209		

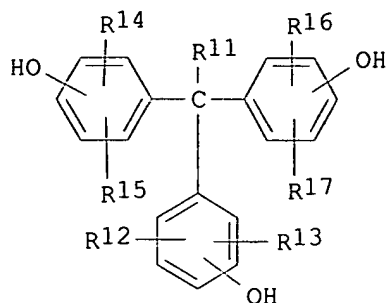
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 11249306	ICM	G03F007-037
	ICS	G03F007-022; G03F007-075; H01L021-027; C08G069-42
	IPCI	G03F0007-037 [ICM,6]; G03F0007-022 [ICS,6]; G03F0007-075 [ICS,6]; H01L0021-027 [ICS,6]; C08G0069-42 [ICS,6]

GI



I



II

AB The composition contains 100 parts polyamide EC(O)[[NHX(OH)2NHC(O)YCO]a[NHZNHC(O)YC(O)]b]nNHX(OH)2NHCOE (X = tetravalent aromatic group; Y = divalent aromatic group; Z = R1SiR3R4OSiR3R4R2; R1-R2 = divalent organic group; R3, R4 = monovalent organic group; E = aliphatic, alicyclic, or aromatic group substituted with  $\geq 1$  alkenyl or alkynyl;  $a + b = 100$ ;  $a = 60.0-100.0$ ;  $b = 0-40$ ;  $n = 2-500$ ), 1-100 parts **photosensitive** diazoquinones, and 1-30 parts mixts. of bisphenols I and trisphenols II (R5, R6, R11 = H, alkyl; R7-R10, R12-R17 = H, halogen, OH, alkyl, alkoxy, cycloalkyl) satisfying  $\gamma = \alpha + \beta$ ,  $\alpha \neq 0$ , and  $\beta \neq 0$

( $\alpha$  = amount of bisphenols;  $\beta$  = amount of trisphenols,  $\gamma$  = total amount of phenols). The semiconductor device is that manufactured by a process involving applying of the above composition on a semiconductor element, so that the thickness of the resulting film after dehydration ring closure is 0.1-20  $\mu\text{m}$ , followed by prebaking, exposing, developing, and heating. The **photoimaging** polybenzoxazole precursor composition shows improved storage stability and improved adhesion to substrates.

ST pos working **photoimaging** material polybenzoxazole precursor;  
polyamide pos working **photoimaging** material; adhesion strength  
substrate **photoimaging** material; storage stability  
polybenzoxazole precursor **photoimaging** material; semiconductor  
device fabrication **photoimaging** material

IT **Photoimaging** materials  
Semiconductor device fabrication

(pos.-working **photoimaging** material containing polyamide as  
polybenzoxazole precursor for semiconductor device fabrication)

IT Polyamides, uses  
Polybenzoxazoles

RL: TEM (Technical or engineered material use); USES (Uses)  
(pos.-working **photoimaging** material containing polyamide as  
polybenzoxazole precursor for semiconductor device fabrication)

IT Dehydration reaction  
(pos.-working **photoimaging** material containing polyamide  
providing polybenzoxazole after dehydration ring closure)

IT 603-44-1 2467-02-9 2467-03-0 27955-94-8 142541-99-9 143213-35-8

RL: TEM (Technical or engineered material use); USES (Uses)  
(in pos.-working **photoimaging** material containing polyamide as  
polybenzoxazole precursor for semiconductor device fabrication)

IT 110-16-7DP, Maleic acid, reaction products with polyamides 826-62-0DP,  
5-Norbornene-2,3-dicarboxylic anhydride, reaction products with polyamides  
56793-42-1DP, 5-norbornene-2,3-dicarboxylic acid-terminated  
**112480-82-7DP**, 5-norbornene-2,3-dicarboxylic acid-terminated  
174407-76-2DP, 5-norbornene-2,3-dicarboxylic acid-terminated  
242460-68-0DP, reaction products with unsatd. dicarboxylic acid  
242460-70-4DP, reaction products with unsatd. dicarboxylic acid  
242460-72-6DP, reaction products with unsatd. dicarboxylic acid  
242460-73-7DP, reaction products with unsatd. dicarboxylic acid  
242460-74-8DP, reaction products with unsatd. dicarboxylic acid  
243133-22-4DP, 5-norbornene-2,3-dicarboxylic acid-terminated  
243133-24-6P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(pos.-working **photoimaging** material containing polyamide as

## polybenzoxazole precursor for semiconductor device fabrication)

L9 ANSWER 49 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:365903 CAPLUS

DN 131:65894

ED Entered STN: 14 Jun 1999

TI **Photoresist** composition containing polyamide

IN Takahashi, Hideaki; Sakai, Yuki

PA Asahi Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-038

ICS G03F007-004; H01L021-027; H01L021-312

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11153866	A2	19990608	JP 1997-319588	19971120
PRAI	JP 1997-319588		19971120		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 11153866	ICM	G03F007-038
	ICS	G03F007-004; H01L021-027; H01L021-312
	IPCI	G03F0007-038 [ICM,6]; G03F0007-004 [ICS,6]; H01L0021-027 [ICS,6]; H01L0021-312 [ICS,6]

AB The title composition contains (a) a hydroxypolyamide comprising structural units [NHR1(OH)2NHCOR2CO]a and [NHR3NHCOR4CO]b (R1 = tetravalent aromatic group; R2, R4 = divalent aromatic group; R3 = divalent organic group; a = 20-100; b = 0-80, a + b = 100) 100, (b) a compound generating an acid upon radiation irradiation 0.5-20, and (c) a compound that can crosslink the polymer by the action of acid 3-40 parts. The composition is alkali-developable and shows high **photosensitivity** and resolution, and a cured film pattern with high thermal resistance is obtained therefrom.

ST **photoresist** hydroxy polyamide; acid generatorIT **photoresist**; crosslinking agent **photoresist**

IT Heat-resistant materials

**Photoresists**

(photoresist composition containing hydroxypolyamide, acid generator, and crosslinking agent)

IT Polyamides, uses

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(photoresist composition containing hydroxypolyamide, acid generator, and crosslinking agent)

IT Aminoplasts

RL: TEM (Technical or engineered material use); USES (Uses)

(photoresist composition containing hydroxypolyamide, acid generator, and crosslinking agent)

IT Polysiloxanes, uses

Polysiloxanes, uses

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(polyamide-, photoresist composition containing hydroxypolyamide, acid generator, and crosslinking agent)

IT Polyethers, preparation

Polyethers, preparation

Polyethers, preparation

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polybenzoxazole-, fluorine-containing; photoresist composition containing hydroxypolyamide, acid generator, and crosslinking agent)

IT Fluoropolymers, preparation

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(polybenzoxazole-polyether-; **photoresist** composition containing hydroxypolyamide, acid generator, and crosslinking agent)

IT Polybenzoxazoles  
Polybenzoxazoles  
Polybenzoxazoles  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-, fluorine-containing; **photoresist** composition containing hydroxypolyamide, acid generator, and crosslinking agent)

IT Polyamides, uses  
Polyamides, uses  
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
(polysiloxane-; **photoresist** composition containing hydroxypolyamide, acid generator, and crosslinking agent)

IT 42573-57-9  
RL: TEM (Technical or engineered material use); USES (Uses)  
(acid generator; **photoresist** composition containing hydroxypolyamide, acid generator, and crosslinking agent)

IT **112480-82-7P**, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenylether dicarboxylic acid copolymer, sru 112492-60-1P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenylether dicarboxylic acid copolymer 112492-61-2P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthalic acid copolymer 113339-21-2P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthalic acid copolymer, sru 113716-09-9P 123349-57-5P 205751-00-4P, 2,2'-Bis(4-carboxyphenyl)hexafluoropropane-3,3'-dihydroxy-4,4'-diaminobiphenyl copolymer 205751-03-7P, 2,2'-Bis(4-carboxyphenyl)hexafluoropropane-3,3'-dihydroxy-4,4'-diaminobiphenyl copolymer, sru 223679-93-4P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diaminodiphenyl ether-4,4'-diphenylether dicarboxylic acid-isophthalic acid copolymer 227946-65-8P  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(**photoresist** composition containing hydroxypolyamide, acid generator, and crosslinking agent)

IT 9003-08-1 17464-88-9, Powderlink 1174  
RL: TEM (Technical or engineered material use); USES (Uses)  
(**photoresist** composition containing hydroxypolyamide, acid generator, and crosslinking agent)

L9 ANSWER 50 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:260865 CAPLUS

DN 130:330573

ED Entered STN: 28 Apr 1999

TI **Photosensitive** polyamide composition

IN Kataoka, Yasuhiro; Sakai, Ko

PA Asahi Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F007-075

ICS G03F007-022; G03F007-037; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 37

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11109636	A2	19990423	JP 1997-286251	19971003
PRAI	JP 1997-286251		19971003		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 11109636	ICM	G03F007-075
	ICS	G03F007-022; G03F007-037; H01L021-027
	IPCI	G03F0007-075 [ICM,6]; G03F0007-022 [ICS,6]; G03F0007-037 [ICS,6]; H01L0021-027 [ICS,6]

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

- AB The title composition comprises (a) a polyamide containing a repeating unit  $\text{COX1CONHX2NH}$  [ $\text{X1} = \text{I, II}$ ;  $\text{X2} = \text{III, IV, V}$ ;  $\text{A1-2} = \text{single bond, O, C(CF}_3\text{)}_2, \text{SO}_2, \text{CO, CH}_2, \text{SO}$ ] 100, (b) a naphthoquinonediazide compound 0.5-40, and (c) an adhesive  $\text{HOCOX3CONR3X4mSiR2n(OR1)3-n}$  and/or  $\text{X5[(CO}_2\text{H)CONR3X4mSiR2n(OR1)3-n]}_2$  [ $\text{X4} = \text{divalent organic group including C atom linking directly to the Si atom; } m = 0 \text{ or } 1; \text{R1, R2} = \text{C1-4 alkyl; } n = 0-2; \text{R3} = \text{H, monovalent hydrocarbon residue; } \text{X3} = \text{VI (R4} = \text{H, C1-4 alkyl, CO}_2\text{H), divalent hydrocarbon having linking groups at the adjacent C atoms; } \text{X5} = \text{VII-X (X6} = \text{O, CO, S, SO}_2, \text{CH}_2, \text{CMe}_2, \text{C(CF}_3\text{)}_2 \text{ )}] 0.05-20 \text{ parts. A polyamide containing a repeating unit } (\text{COX1CONHX2NH})_k(\text{COX3CONHX4NH})_l \text{ (X1, X3} = \text{I, II; } \text{X2} = \text{III, IV, V; } \text{X4} = \text{divalent linking group containing no OH group; } k + l = 100 \text{ mol\%, } 60 \leq k < 100, 40 \geq l > 0) \text{ may be used in place of the above polyamide. The pos.-working composition provides a high resolution pattern showing good adhesion to substrate upon development and the film after heat treatment exhibits good water resistance in adhesion to substrate.}$
- ST **photoresist** polyamide naphthoquinonediazide; silicon amide adhesive **photoresist**
- IT Positive **photoresists**  
(pos. **photoresist** containing polyamide, naphthoquinonediazide, and siliconamide adhesive)
- IT Polyamides, preparation  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos. **photoresist** containing polyamide, naphthoquinonediazide, and siliconamide adhesive)
- IT 3770-97-6, 1,2-Naphthoquinonediazide-5-sulfonyl chloride 36451-09-9, 1,2-Naphthoquinonediazido-4-sulfonyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of hydroxybenzene derivative)
- IT 599-64-4 1143-72-2, 2,3,4-Trihydroxybenzophenone 1571-75-1, 1,1-Bis(4-hydroxyphenyl)-1-phenylethane  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification with naphthoquinonediazidesulfonyl chloride)
- IT 85-44-9DP, Phthalic anhydride, amides with aminopropyltriethoxysilane 89-32-7DP, Pyromellitic anhydride, amides with aminopropyltriethoxysilane 919-30-2DP, 3-Aminopropyltriethoxysilane, amides with polycarboxylic acid 1823-59-2DP, 4,4'-Oxydiphthalic dianhydride, amides with aminopropyltriethoxysilane 2421-28-5DP, Benzophenone tetracarboxylic dianhydride, amides with aminopropyltriethoxysilane 56036-16-9DP, Diphenylsulfone tetracarboxylic dianhydride, amides with aminopropyltriethoxysilane 68510-93-0P, 2,3,4-Trihydroxy benzophenone 1,2-naphthoquinonediazide-5-sulfonate 71728-47-7P, 2-Phenyl-2-(4-hydroxyphenyl)propane 1,2-naphthoquinonediazide-5-sulfonate **112480-82-7P** 112492-60-1P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-dicarboxydiphenyl ether copolymer 112492-61-2P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthalic acid copolymer 113339-21-2P 113716-09-9P 123349-57-5P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-2,2-bis(4-carboxyphenyl)hexafluoropropane copolymer 223679-93-4P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diaminodiphenyl ether-4,4'-dicarboxydiphenyl ether-isophthalic acid copolymer 223918-24-9P, 1,1-Bis(4-hydroxyphenyl)-1-phenylethane 1,2-naphthoquinonediazide-4-sulfonate  
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pos. **photoresist** containing polyamide, naphthoquinonediazide, and siliconamide adhesive)

ED Entered STN: 28 Apr 1999  
 TI Positively **photosensitive** polyamide composition giving patterns  
 with good water-resistant adhesion strength  
 IN Kataoka, Yasuhiro; Sakai, Ko  
 PA Asahi Chemical Industry Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03F007-075  
 ICS G03F007-022; G03F007-037; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

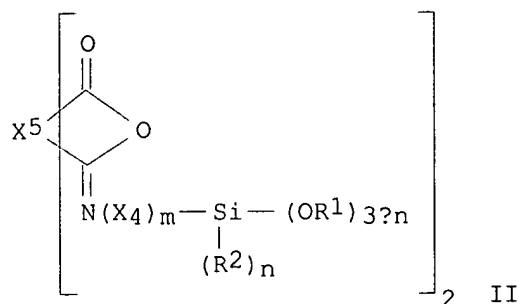
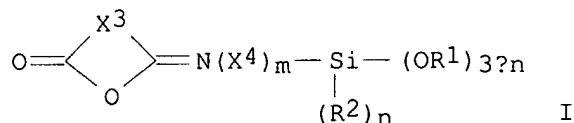
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11109635	A2	19990423	JP 1997-286252	19971003
PRAI	JP 1997-286252		19971003		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 11109635	ICM	G03F007-075
	ICS	G03F007-022; G03F007-037; H01L021-027
	IPCI	G03F0007-075 [ICM,6]; G03F0007-022 [ICS,6]; G03F0007-037 [ICS,6]; H01L0021-027 [ICS,6]

GI



AB The composition contains (A) 100 parts polyamide having a structural repeating unit C(:O)X<sup>1</sup>C(:O)NHX<sup>2</sup>NH or [C(:O)X<sup>1</sup>C(:O)NHX<sup>2</sup>NH]<sub>k</sub>[C(:O)X<sup>3</sup>C(:O)NHX<sup>4</sup>NH]<sub>l</sub>, (B) 0.5-40 parts naphthoquinonediazide, and (C) 0.05-20 parts siliconamide adhesive I and/or II. The composition gives patterns with high resolution and good water-resistant adhesion strength.

ST pos **photoresist** polyamide high resolu pattern;  
 naphthoquinonediazide pos **photoresist** polyamide; siliconamide  
 adhesive pos **photoresist** polyamide

IT Positive **photoresists**  
 (pos. **photosensitive** polyamide composition giving patterns with  
 good water-resistant adhesion strength)

IT Polyamides, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (pos. **photosensitive** polyamide composition giving patterns with  
 good water-resistant adhesion strength)

IT Adhesives  
 (water-resistant; pos. **photosensitive** polyamide composition giving  
 patterns with good water-resistant adhesion strength)

IT 85-44-9DP, Phthalic anhydride, reaction products with aminopropyltriethoxysilane 89-32-7DP, Pyromellitic dianhydride, reaction products with aminopropyltriethoxysilane 919-30-2DP,  $\gamma$ -Aminopropyltriethoxysilane, reaction products with acid dianhydrides 1823-59-2DP, 4,4'-Oxydipthalic dianhydride, reaction products with aminopropyltriethoxysilane 2421-28-5DP, Benzophenonetetracarboxylic dianhydride, reaction products with aminopropyltriethoxysilane 56036-16-9DP, Diphenyl sulfonetetracarboxylic dianhydride, reaction products with aminopropyltriethoxysilane  
 RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)  
 (pos. **photosensitive** polyamide composition giving patterns with good water-resistant adhesion strength)

IT 68510-93-0P, 2,3,4-Trihydroxybenzophenone ester with 1,2-naphthoquinonediazide-5-sulfonic chloride 71728-47-7P, 2-Phenyl-2-(4-hydroxyphenyl)propane ester with 1,2-naphthoquinonediazide-5-sulfonic chloride **112480-82-7P**, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid copolymer, sru 112492-60-1P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diphenyl ether dicarboxylic acid copolymer 112492-61-2P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthalic acid copolymer 113339-21-2P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-isophthalic acid copolymer, sru 113716-09-9P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-2,2'-bis(4-carboxyphenyl)hexafluoropropane copolymer, sru 123349-57-5P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-2,2'-bis(4-carboxyphenyl)hexafluoropropane copolymer 205751-00-4P, 2,2'-Bis(4-carboxyphenyl)hexafluoropropane-3,3'-dihydroxy-4,4'-diaminobiphenyl copolymer 205751-03-7P, 2,2'-Bis(4-carboxyphenyl)hexafluoropropane-3,3'-dihydroxy-4,4'-diaminobiphenyl copolymer, sru 223679-93-4P, 2,2-Bis(3-amino-4-hydroxyphenyl)hexafluoropropane-4,4'-diaminodiphenyl ether-4,4'-diphenyl ether dicarboxylic acid-isophthalic acid copolymer 223918-24-9P, 1,1-Bis(4-hydroxyphenyl)-1-phenylethane ester with 1,2-naphthoquinonediazide-4-sulfonic chloride  
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (pos. **photosensitive** polyamide composition giving patterns with good water-resistant adhesion strength)

L9 ANSWER 52 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1999:231812 CAPLUS  
 DN 130:318600  
 ED Entered STN: 14 Apr 1999  
 TI Development of polyamide phenol-based **photosensitive** resin composition with aqueous alkaline solution containing nonionic surfactant  
 IN Sakai, Ko; Kataoka, Yasuhiro  
 PA Asahi Chemical Industry Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese  
 IC ICM G03F007-32  
 ICS G03F007-022; G03F007-037; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11095448	A2	19990409	JP 1997-274991	19970924
PRAI	JP 1997-274991		19970924		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 11095448	ICM	G03F007-32
	ICS	G03F007-022; G03F007-037; H01L021-027
	IPCI	G03F0007-32 [ICM,6]; G03F0007-022 [ICS,6]; G03F0007-037 [ICS,6]; H01L0021-027 [ICS,6]

AB The title method comprises development of a **photosensitive** resin

composition containing (A) 100 parts polyamide phenol having a repeating unit of [NHX1(OH)2NHCOX2CO]a(NHX3NHCOX2CO)b [X1 = Q1, Q2; A1, A2 = none, O, C(CF3)2, CO, SO2; X2 = phenylene, C6H4A2C6H4; X2 = divalent aromatic group; a = 60.0-100, b = 0-40.0 mol%] and (B) 1-50 parts naphthoquinonediazide derivs. with an aqueous alkaline solution containing a nonionic surfactant to give a pattern. The method using the composition gives high-resolution resist patterns without delamination and remaining residues.

ST polyamide phenol **photoresist** alk development; nonionic surfactant alk developer **photoresist**

IT **Photoresists**  
(development of polyamide phenol-based **photosensitive** resin composition with aqueous alkaline solution containing nonionic surfactant)

IT Surfactants  
(nonionic; development of polyamide phenol-based **photosensitive** resin composition with aqueous alkaline solution containing nonionic surfactant)

IT Polyamides, processes  
Polyamides, processes  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(phenolic; development of polyamide phenol-based **photosensitive** resin composition with aqueous alkaline solution containing nonionic surfactant)

IT Phenolic resins, processes  
Phenolic resins, processes  
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
(polyamide-; development of polyamide phenol-based **photosensitive** resin composition with aqueous alkaline solution containing nonionic surfactant)

IT 107761-81-9  
RL: CAT (Catalyst use); USES (Uses)  
(development of polyamide phenol-based **photosensitive** resin composition with aqueous alkaline solution containing nonionic surfactant)

IT 52624-57-4 80941-21-5 106392-12-5, Ethylene oxide-propylene oxide block copolymer  
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)  
(development of polyamide phenol-based **photosensitive** resin composition with aqueous alkaline solution containing nonionic surfactant)

IT **112480-82-7P** 112492-60-1P 112492-61-2P 113339-21-2P 123349-56-4P 223484-05-7P  
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
(development of polyamide phenol-based **photosensitive** resin composition with aqueous alkaline solution containing nonionic surfactant)

IT 94896-59-0  
RL: CAT (Catalyst use); USES (Uses)  
(**photosensitizer**; development of polyamide phenol-based **photosensitive** resin composition with aqueous alkaline solution containing nonionic surfactant)

L9 ANSWER 53 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1999:166225 CAPLUS  
DN 130:202920  
ED Entered STN: 15 Mar 1999  
TI Positive-working **photosensitive** resin composition  
IN Banba, Toshio; Hirano, Takashi; Makabe, Hiroaki; Taketa, Naoshige  
PA Sumitomo Bakelite Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 16 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM G03F007-022  
ICS C08K005-08; C08K005-13; C08L077-06; G03F007-037; G03F007-038; G03F007-075  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76  
FAN.CNT 1

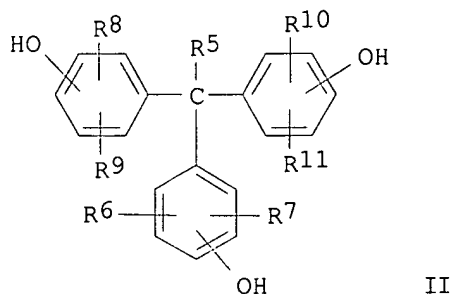
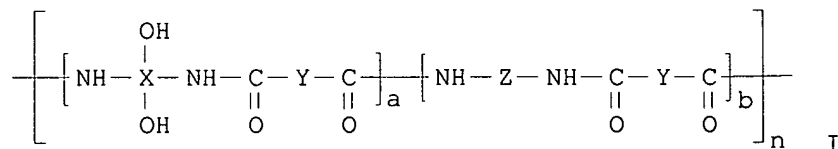


	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11065107	A2	19990305	JP 1998-163076	19980611
	JP 3478376	B2	20031215		
	JP 2004078231	A2	20040311	JP 2003-311947	20030903
PRAI	JP 1997-154123	A	19970611		
	JP 1998-163076	A3	19980611		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 11065107	ICM	G03F007-022
	ICS	C08K005-08; C08K005-13; C08L077-06; G03F007-037; G03F007-038; G03F007-075
	IPCI	G03F0007-022 [ICM,6]; C08K0005-08 [ICS,6]; C08K0005-13 [ICS,6]; C08L0077-06 [ICS,6]; G03F0007-037 [ICS,6]; G03F0007-038 [ICS,6]; G03F0007-075 [ICS,6]
JP 2004078231	IPCI	G03F0007-037 [ICM,7]; C08G0069-42 [ICS,7]; G03F0007-004 [ICS,7]; G03F0007-022 [ICS,7]; G03F0007-075 [ICS,7]; H01L0021-027 [ICS,7]
	FTERM	2H025/AA10; 2H025/AA14; 2H025/AB16; 2H025/AB17; 2H025/AC01; 2H025/AD03; 2H025/BE01; 2H025/CB23; 2H025/CC20; 2H025/FA03; 2H025/FA17; 4J001/DA01; 4J001/DB02; 4J001/DC02; 4J001/DC05; 4J001/DC08; 4J001/DC10; 4J001/DC22; 4J001/DC24; 4J001/DD05; 4J001/EB34; 4J001/EB44; 4J001/EB57; 4J001/EB58; 4J001/EB60; 4J001/EC24; 4J001/EC33; 4J001/EC66; 4J001/EC67; 4J001/EC70; 4J001/FA01; 4J001/FB03; 4J001/FC06

OS MARPAT 130:202920  
GI



AB The pos.-working **photosensitive** resin composition comprises 100 polyamide I (X = 4-valent aromatic; Y = divalent aromatic; X = R1SiR3R4OSiR3R4R2; R1, R2 = divalent organic group; R3, R4 = monovalent organic group; a = 60.0-100.0 M%; b = 0-40.0 M%; n = 2-500), 1-100 **photosensitive** diazoquinone compound, and 1-30 parts phenol compound II (R5 = H, alkyl; R6-11 = H, halo, OH, alkyl, alkoxy, cycloalkyl). The resin composition suitable as a semiconductor wafer coating shows excellent adhesion to a packaging resin.

ST pos working **photosensitive** resin compn **photoresist**  
polyamide diazoquinone phenol

IT Polyamides, uses  
RL: TEM (Technical or engineered material use); USES (Uses)  
(in pos.-working **photosensitive** resin composition for

semiconductor wafer coating)  
 IT **Photoresists**  
 (pos.-working **photosensitive** resin composition for semiconductor wafer coating)  
 IT Semiconductor devices  
 (pos.-working **photosensitive** resin composition for wafer coatings of)  
 IT 603-44-1 27955-94-8 29157-91-3 51202-69-8 51728-14-4 56793-42-1  
 110726-28-8 **112480-82-7** 116325-73-6 133440-72-9  
 142541-99-9 143213-35-8 162957-09-7 174407-76-2 201793-76-2  
 220830-87-5  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (in pos.-working **photosensitive** resin composition for semiconductor wafer coating)

L9 ANSWER 54 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1998:118571 CAPLUS  
 DN 128:198591  
 ED Entered STN: 27 Feb 1998  
 TI Processing magnetic recording layer-backed silver halide **photographic** film with final processing solution  
 IN McGuckin, Hugh Gerald; Badger, John Stuart; Boersen, Brad Mitchell  
 PA Eastman Kodak Co., USA  
 SO U.S., 7 pp.  
 CODEN: USXXAM

DT Patent  
 LA English  
 IC ICM G03C007-407  
 INCL 430372000  
 CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1  

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5716765	A	19980210	US 1996-639858	19960419
	JP 10039474	A2	19980213	JP 1997-101387	19970418
PRAI	US 1996-639858	A	19960419		

CLASS  

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5716765	ICM	G03C007-407
	INCL	430372000
	IPCI	G03C0007-407 [ICM,6]
	IPCR	G03C0005-12 [I,C]; G03C0005-14 [I,A]; G03C0007-30 [I,A]; G03C0007-30 [I,C]
	NCL	430/372.000; 430/428.000; 430/429.000; 430/463.000; 430/533.000
	ECLA	G03C005/14; G03C007/30Z
JP 10039474	IPCI	G03C0011-00 [ICM,6]; G03C0001-00 [ICS,6]; G03C0001-76 [ICS,6]

OS MARPAT 128:198591  
 AB A **photog.** film having a magnetic recording layer is processed using a final processing solution containing a mixture of surfactants. The final processing solution can be a final rinse solution or an image-stabilizing solution further containing an image stabilizer. The specific final processing solution provides a processed **photog.** film that is free of scum, non-tacky, and resistant to abrasion and fingerprinting on the back side.  
 ST processing soln surfactant magnetic **photog** film  
 IT Alcohols, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (C12-15, ethoxylated; processing of **photog.** films with back magnetic recording layers using final processing solns. containing)  
 IT **Photographic** processing  
 (final processing solns. containing surfactants for **photog.** films with back magnetic recording layers)  
 IT Polyesters, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (final processing solns. containing surfactants for processing **photog.** films with back magnetic recording layers with supports)

of)

IT Polyoxyalkylenes, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (processing of **photog.** films with back magnetic recording  
 layers using final processing solns. containing)

IT 9002-93-1, Triton X 405  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (Triton X 102, Triton X 100; processing of **photog.** films with  
 back magnetic recording layers using final processing solns. containing)

IT 1309-37-1, Ferric oxide, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (final processing solns. containing surfactants for processing  
**photog.** films with back magnetic recording layers containing  
 cobalt- and zinc-doped)

IT 7440-48-4, Cobalt, uses 7440-66-6, Zinc, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (final processing solns. containing surfactants for processing  
**photog.** films with back magnetic recording layers containing ferric  
 oxide doped with)

IT 9020-32-0, Poly(ethylene naphthalate) 9020-73-9 24936-69-4,  
 Poly(1,4-cyclohexanedimethylene terephthalate) **24936-76-3**,  
 Poly(ethylene 1,2-diphenoxyethane-4,4'-dicarboxylate) 24968-12-5,  
 Poly(butylene terephthalate) 24980-45-8 25037-99-4 25038-59-9,  
 Poly(ethylene terephthalate), uses 26062-94-2, Poly(butylene  
 terephthalate)  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (final processing solns. containing surfactants for processing  
**photog.** films with back magnetic recording layers with supports  
 of)

IT 50-00-0, Formaldehyde, uses 100-97-0, Hexamethylenetetramine, uses  
 9004-82-4, Witcolate ES-3 9014-90-8, Witcolate D51-51 24938-91-8,  
 Renex 30 25322-68-3 101027-76-3, Zonyl FSO 106392-12-5, Pluronic L44  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (processing of **photog.** films with back magnetic recording  
 layers using final processing solns. containing)

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Anon; EP 0395442 A3 1990 CAPLUS
- (2) Anon; JP 06-289559 1994 CAPLUS
- (3) Anon; 3M Fluorad Fluorosurfactants Selection Guide, Performance Chemicals &  
 Fluids 1996
- (4) Anon; 3M Fluorad Fluorosurfactants for Coating Formulations and Household  
 Product Additives 1996
- (5) Brick; US 5395743 1995 CAPLUS
- (6) Dupont Special Chemicals; Zonyl Fluorosurfactants "Technical Information"  
 1993
- (7) Dupont Specialty Chemicals; Zonyl FS-300 Fluorosurfactant, "Technical  
 Information" 1994
- (8) Gormel; US 4859574 1989 CAPLUS
- (9) Goto; US 5460923 1995 CAPLUS
- (10) Hoechst Celanese; Product Data on Fluowet OTN 1996
- (11) Ikenoue; US 5254446 1993 CAPLUS
- (12) Iwagaki; US 5376484 1994 CAPLUS
- (13) Kawamura; US 5360700 1994 CAPLUS
- (14) Kuse; US 4778748 1988 CAPLUS
- (15) Kuse; US 5110716 1992 CAPLUS
- (16) McGuckin; US 5529890 1996 CAPLUS
- (17) McGuckin; US 5578432 1996 CAPLUS
- (18) Mukunoki; US 5336589 1994 CAPLUS
- (19) Schwartz; US 4786583 1988 CAPLUS
- (20) Wexler; US 5397826 1995 CAPLUS
- (21) Yokota; US 5229259 1993 CAPLUS
- (22) Yokota; US 5413900 1995 CAPLUS
- (23) Yoshimoto; US 5256524 1993 CAPLUS

L9 ANSWER 55 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1997:761863 CAPLUS

DN 128:68500

ED Entered STN: 06 Dec 1997

TI Positive-type **photosensitive** resin composition for semiconductor device fabrication  
 IN Hirano, Takashi; Banba, Toshio; Makabe, Hiroaki; Takeda, Naoshige; Takeda, Toshiro  
 PA Sumitomo Bakelite Co., Ltd., Japan  
 SO Eur. Pat. Appl., 46 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 IC ICM G03F007-023  
 ICS G03F007-075; G03F007-022  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 76

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 807852	A1	19971119	EP 1997-107190	19970430
	EP 807852	B1	20010321		
	R: DE, FR, GB, IT, NL				
	JP 09302221	A2	19971125	JP 1996-117387	19960513
	JP 3207352	B2	20010910		
	JP 09321038	A2	19971212	JP 1996-138593	19960531
	JP 3346981	B2	20021118		
	JP 10010727	A2	19980116	JP 1996-159679	19960620
	JP 3449856	B2	20030922		
	JP 10010740	A2	19980116	JP 1996-164472	19960625
	JP 3449858	B2	20030922		
	JP 10022281	A2	19980123	JP 1996-169319	19960628
	JP 3390303	B2	20030324		
PRAI	JP 1996-117387	A	19960513		
	JP 1996-138593	A	19960531		
	JP 1996-159679	A	19960620		
	JP 1996-164472	A	19960625		
	JP 1996-169319	A	19960628		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 807852	ICM	G03F007-023
	ICS	G03F007-075; G03F007-022
	IPCI	G03F0007-023 [ICM,6]; G03F0007-075 [ICS,6]; G03F0007-022 [ICS,6]
	ECLA	G03F007/022M; G03F007/075F; G03F007/075M
JP 09302221	IPCI	C08L0077-00 [ICM,6]; C08L0077-00 [ICS,6]; G03F0007-022 [ICS,6]; G03F0007-039 [ICS,6]; G03F0007-075 [ICS,6]
JP 09321038	IPCI	H01L0021-312 [ICM,6]; C08G0073-22 [ICS,6]; G03F0007-023 [ICS,6]; G03F0007-075 [ICS,6]; H01L0021-027 [ICS,6]
JP 10010727	IPCI	G03F0007-038 [ICM,6]; C08G0069-42 [ICS,6]; C08K0005-23 [ICS,6]; C08L0077-06 [ICS,6]; G03F0007-022 [ICS,6]; G03F0007-075 [ICS,6]; C08K0005-54 [ICS,6]
JP 10010740	IPCI	G03F0007-075 [ICM,6]; C08G0073-10 [ICS,6]; G03F0007-016 [ICS,6]; G03F0007-037 [ICS,6]; G03F0007-039 [ICS,6]; G03F0007-085 [ICS,6]; H01L0021-027 [ICS,6]; H01L0021-312 [ICS,6]; H05K0003-28 [ICS,6]
JP 10022281	IPCI	H01L0021-312 [ICM,6]; C08G0073-22 [ICS,6]; G03F0007-023 [ICS,6]; G03F0007-038 [ICS,6]; G03F0007-075 [ICS,6]; H01L0021-027 [ICS,6]; H01L0021-768 [ICS,6]

AB A pos.-type **photosensitive** resin composition for semiconductor device fabrication comprises (A) 100 parts by weight of a polyamide represented by the general formula  $-(\text{NHX}(\text{OH})2\text{NHCOYCO})_a(\text{NHZNHCOYCO})_b\text{n}-$  wherein X represents a tetravalent aromatic group; Y represents a divalent aromatic group; Z represents a group represented by the formula  $-\text{R1Si}(\text{R3})(\text{R4})\text{OSi}(\text{R3})(\text{R4})\text{R2}-$  in which R1 and R2 represent divalent organic groups and R3 and R4 represent monovalent organic groups; a and b represent molar fractions;  $a + b = 100 \text{ mol\%}$ ;  $a = 60.0-100.0 \text{ mol\%}$ ;  $b = 0-40.0 \text{ mol\%}$ ; and n represents an integer of 2 to 500, (B) 1 to 100 parts by weight of a **photosensitive** diazoquinone compound and (C) 1 to 50 parts by weight of a phenol compound represented by a specific structural formula and/or (D) 0.1 to 20 parts by weight of an organosilicon compound represented by a specific structural

formula. A semiconductor device is fabricated by forming a pattern of a polybenzoxazole resin in a thickness of 0.1 to 20  $\mu\text{m}$  on a semiconductor substrate by using the above **photosensitive** resin composition

ST pos **photosensitive** compn polamide semiconductor device;  
diazquinone phenol polyamide pos **photosensitive** compn

IT Positive **photoresists**  
(containing polyamides, diazoquinones, phenols, and organosilicon compds. for semiconductor device fabrication)

IT Polyethers, preparation  
Polyethers, preparation  
Polysiloxanes, preparation  
Polysiloxanes, preparation  
Polysulfones, preparation  
Polysulfones, preparation  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyamide-; preparation and use in pos. **photosensitive** compns. containing diazoquinones, phenols, and organosilicon compds. for semiconductor device manufacture)

IT Polyamides, preparation  
Polyamides, preparation  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polyether-; preparation and use in pos. **photosensitive** compns. containing diazoquinones, phenols, and organosilicon compds. for semiconductor device manufacture)

IT Polyamides, preparation  
Polyamides, preparation  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polysiloxane-; preparation and use in pos. **photosensitive** compns. containing diazoquinones, phenols, and organosilicon compds. for semiconductor device manufacture)

IT Polyamides, preparation  
Polyamides, preparation  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(polysulfone-; preparation and use in pos. **photosensitive** compns. containing diazoquinones, phenols, and organosilicon compds. for semiconductor device manufacture)

IT Integrated circuits  
Semiconductor devices  
(pos. **photosensitive** compns. containing polyamides, diazoquinones, phenols, and organosilicon compds. for fabrication of)

IT **Photoimaging** materials  
(pos.; containing polyamides, diazoquinones, phenols, and organosilicon compds. for semiconductor device fabrication)

IT Polyamides, preparation  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(semiconductor device fabrication using pos.-type **photosensitive** resin compns. containing diazoquinones, phenols and)

IT 620-92-8 2467-02-9 2467-03-0  
RL: TEM (Technical or engineered material use); USES (Uses)  
(pos. **photosensitive** compns. for semiconductor device manufacture containing polyamides, diazoquinones and)

IT 50488-14-7 124426-15-9 147357-03-7 200062-51-7 200062-52-8  
200062-53-9 200062-54-0 200062-55-1  
RL: TEM (Technical or engineered material use); USES (Uses)  
(pos. **photosensitive** compns. for semiconductor device manufacture containing polyamides, diazoquinones, phenols and)

IT 137902-98-8 138636-85-8  
RL: TEM (Technical or engineered material use); USES (Uses)  
(pos. **photosensitive** compns. for semiconductor device manufacture containing polyamides, phenols and)

IT 29157-91-3P 51202-69-8P 56793-42-1P **112480-82-7P**  
113742-48-6P 116325-73-6P 133440-72-9P 174407-76-2P 200062-50-6P  
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation and use in pos. **photosensitive** compns. containing diazoquinones, phenols, and organosilicon compds. for semiconductor device manufacture)

L9 ANSWER 56 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1997:756838 CAPLUS  
 DN 128:62276  
 ED Entered STN: 04 Dec 1997  
 TI Positive type **photosensitive** resin compositions with high sensitivity for forming high-yield film patterns with excellent adhesion with potting resins  
 IN Banba, Toshio; Hirano, Takashi; Takeda, Naoshige; Takeda, Toshiro  
 PA Sumitomo Bakelite Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 22 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C08L077-00  
 ICS C08L077-00; G03F007-022; G03F007-039; G03F007-075  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 74, 76

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09302221	A2	19971125	JP 1996-117387	19960513
	JP 3207352	B2	20010910		
	TW 502135	B	20020911	TW 1997-86105647	19970429
	EP 807852	A1	19971119	EP 1997-107190	19970430
	EP 807852	B1	20010321		
	R: DE, FR, GB, IT, NL				
	SG 78269	A1	20010220	SG 1997-1374	19970502
	CN 1165980	A	19971126	CN 1997-111184	19970512
	CN 1113273	B	20030702		
	US 6071666	A	20000606	US 1997-854863	19970512
	US 6235436	B1	20010522	US 1999-442277	19991117
	CN 1435729	A	20030813	CN 2002-103244	20020130
	CN 1381768	A	20021127	CN 2002-119045	20020429
PRAI	JP 1996-117387	A	19960513		
	JP 1996-138593	A	19960531		
	JP 1996-159679	A	19960620		
	JP 1996-164472	A	19960625		
	JP 1996-169319	A	19960628		
	US 1997-854863	A1	19970512		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 09302221	ICM	C08L077-00
	ICS	C08L077-00; G03F007-022; G03F007-039; G03F007-075
	IPCI	C08L0077-00 [ICM,6]; C08L0077-00 [ICS,6]; G03F0007-022 [ICS,6]; G03F0007-039 [ICS,6]; G03F0007-075 [ICS,6]
TW 502135	IPCI	G03F0007-22 [ICM,7]; G03F0007-23 [ICS,7]; H01L0021-00 [ICS,7]
EP 807852	IPCI	G03F0007-023 [ICM,6]; G03F0007-075 [ICS,6]; G03F0007-022 [ICS,6]
	ECLA	G03F007/022M; G03F007/075F; G03F007/075M
SG 78269	IPCI	G03F0007-023 [ICM,7]; G03F0007-022 [ICS,7]
CN 1165980	IPCI	G03F0007-022 [ICM,6]
	ECLA	G03F007/022M; G03F007/075F; G03F007/075M
US 6071666	IPCI	G03F0007-023 [ICM,7]
	IPCR	G03F0007-022 [I,A]; G03F0007-022 [I,C]; G03F0007-075 [I,A]; G03F0007-075 [I,C]
	NCL	430/191.000; 430/014.000; 430/018.000; 430/165.000; 430/192.000; 430/193.000
	ECLA	G03F007/022M; G03F007/075F; G03F007/075M
US 6235436	IPCI	G03F0007-30 [ICM,7]; G03F0007-40 [ICS,7]
	IPCR	G03F0007-022 [I,A]; G03F0007-022 [I,C]; G03F0007-075 [I,A]; G03F0007-075 [I,C]
	NCL	430/018.000; 430/320.000; 430/326.000; 430/330.000; 430/906.000

ECLA G03F007/022M; G03F007/075F; G03F007/075M  
 CN 1435729 IPCI G03F0007-023 [ICM,7]  
 CN 1381768 IPCI G03F0007-004 [ICM,7]; G03F0070-16 [ICS,7]  
 ECLA G03F007/022M; G03F007/075F; G03F007/075M

AB The title compns. comprise (A) 100 parts polyamides  
 [[NHX(OH)2NHCOYCO]a(NHZNHCOYCO)b]n, (B) 1-100 parts **photosensitive**  
 diazoquinone compds., and (C) 1-50 parts phenol compds.  
 HOR7R8C6H2CR5R6C6H2R9R10OH [X = tetravalent aromatic group; Y divalent aromatic  
 group; Z = -R1Si(R3)(R4)OSi(R3)(R4)R2-; R1, R2 = divalent organic group; R3,  
 R4 = monovalent organic group; a, b = molar fraction to a + b = 100 mol%; a =  
 0.0-100 mol%, b; 0-40 mol%; n = 2-500; R5, R6 = H, alkyl; R7-10 = H, OH,  
 alkyl]. A polyamide was prepared from 2,2-bis(3-amino-4-  
 hydroxyphenyl)hexafluoropropane 36.6, terephthaloyl chloride 17, and  
 isophthaloyl chloride 4.3 parts and used with a diazoquinone compound and  
 2,2'-dihydroxydiphenylmethane.

ST **photoresist** polyamide pos type  
 IT Polyethers, preparation  
 Polyethers, preparation  
 Polysiloxanes, preparation  
 Polysiloxanes, preparation  
 Polysulfones, preparation  
 Polysulfones, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyamide-; pos. type **photosensitive** polyamide compns. with  
 high sensitivity for forming high-yield film patterns with excellent  
 adhesion with potting resins)

IT Polyamides, preparation  
 Polyamides, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polyether-; pos. type **photosensitive** polyamide compns. with  
 high sensitivity for forming high-yield film patterns with excellent  
 adhesion with potting resins)

IT Polyamides, preparation  
 Polyamides, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polysiloxane-; pos. type **photosensitive** polyamide compns.  
 with high sensitivity for forming high-yield film patterns with  
 excellent adhesion with potting resins)

IT Polyamides, preparation  
 Polyamides, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (polysulfone-; pos. type **photosensitive** polyamide compns.  
 with high sensitivity for forming high-yield film patterns with  
 excellent adhesion with potting resins)

IT Electronic packaging process  
**Photoresists**  
 (pos. type **photosensitive** polyamide compns. with high  
 sensitivity for forming high-yield film patterns with excellent  
 adhesion with potting resins)

IT Polyamides, preparation  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
 (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (pos. type **photosensitive** polyamide compns. with high  
 sensitivity for forming high-yield film patterns with excellent  
 adhesion with potting resins)

IT Phenols, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (pos. type **photosensitive** polyamide compns. with high  
 sensitivity for forming high-yield film patterns with excellent  
 adhesion with potting resins)

IT 29157-91-3P 51202-69-8P 56793-42-1P **112480-82-7P**  
 113742-48-6P 116325-73-6P, 2,2-Bis(3-amino-4-  
 hydroxyphenyl)hexafluoropropane-isophthaloyl chloride-terephthaloyl  
 chloride copolymer 133440-72-9P 174407-76-2P 200062-50-6P  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM

(Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (pos. type **photosensitive** polyamide compns. with high sensitivity for forming high-yield film patterns with excellent adhesion with potting resins)  
 IT 620-92-8, 4,4'-Dihydroxydiphenyl methane 2467-02-9, 2,2'-Dihydroxydiphenyl methane 2467-03-0, 2,4'-Dihydroxydiphenyl methane 137902-98-8 138636-85-8  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (pos. type **photosensitive** polyamide compns. with high sensitivity for forming high-yield film patterns with excellent adhesion with potting resins)

L9 ANSWER 57 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1997:480320 CAPLUS  
 DN 127:101711  
 ED Entered STN: 01 Aug 1997  
 TI Silver halide color **photographic** material containing development-inhibitor-releasing coupler  
 IN Sato, Naoki; Ishige, Osamu  
 PA Konica Co., Japan  
 SO Jpn. Kokai Tokkyo Koho, 18 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03C007-305  
 ICS G03C007-00; G03C007-20  
 CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

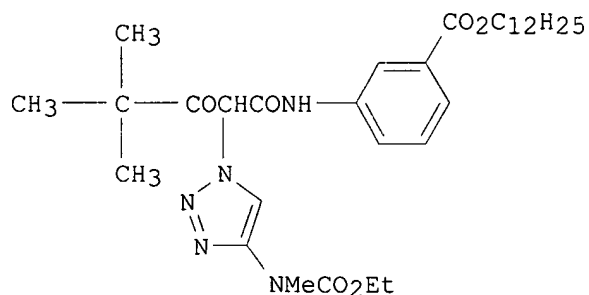
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 09146234	A2	19970606	JP 1995-309184	19951128
PRAI	JP 1995-309184		19951128		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 09146234	ICM	G03C007-305
	ICS	G03C007-00; G03C007-20
	IPCI	G03C0007-305 [ICM,6]; G03C0007-00 [ICS,6]; G03C0007-20 [ICS,6]

GI



AB The title material contains  $\geq 1$  compound selected from Cp(Time)nDINR1CO2R2 or Cp(Time)nDISCONR3R4 [Cp = group releasing (Time)nDINR1CO2R2 or (Time)nDISCONR3R4 upon reaction with oxidized developing agents; Time = timing group; n = 0-2; DI = N-containing heterocycle, N-containing heterocyclic thio group; R1 = substituent; R2 = (substituted) alkyl, aryl; R3, R4 = H, (substituted) alkyl, aryl]. The material shows good color reproducibility and the released development inhibitors have no bad influence on the processing solns. Thus, a multilayer color **photog.** film was prepared by using a



blue-sensitive Ag halide emulsion layer containing I.  
 development inhibitor releasing coupler **photog**  
 IT **Photographic** couplers  
 (development-inhibitor-releasing; **photog**.  
 development-inhibitor-releasing coupler giving no bad influence on  
 processing solution)  
 IT 191284-56-7 191284-58-9 **191284-60-3** 191284-62-5  
 191284-64-7 191284-66-9 191284-68-1  
 RL: DEV (Device component use); MOA (Modifier or additive use); USES  
 (Uses)  
 (**photog**. development-inhibitor-releasing coupler giving no  
 bad influence on processing solution)  
 IT 191284-54-5P  
 RL: DEV (Device component use); MOA (Modifier or additive use); PNU  
 (Preparation, unclassified); PREP (Preparation); USES (Uses)  
 (**photog**. development-inhibitor-releasing coupler giving no  
 bad influence on processing solution)  
 IT 191284-70-5P  
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP (Preparation);  
 RACT (Reactant or reagent)  
 (preparation of **photog**. development-inhibitor-releasing coupler)  
 IT 75-44-5, Phosgene 121-44-8, Triethylamine, reactions 59032-27-8  
 191284-71-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of **photog**. development-inhibitor-releasing coupler)

L9 ANSWER 58 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1992:521436 CAPLUS

DN 117:121436

ED Entered STN: 20 Sep 1992

TI Silver halide **photographic** material

IN Fukazawa, Fumie; Takada, Hiroshi

PA Konica Corp., Japan

SO Eur. Pat. Appl., 50 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM G03C001-795

ICS G03C001-015

CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 484927	A1	19920513	EP 1991-118943	19911106
	R: DE, FR, GB, NL				
	US 5225319	A	19930706	US 1991-788206	19911105
	JP 05005967	A2	19930114	JP 1991-319893	19911107
PRAI	JP 1990-301362	A	19901107		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 484927	ICM	G03C001-795
	ICS	G03C001-015
	IPCI	G03C0001-795 [ICM,5]; G03C0001-015 [ICS,5]
US 5225319	IPCI	G03C0001-795 [ICM,5]; G03C0001-015 [ICS,5]
	IPCR	G03C0001-015 [I,A]; G03C0001-015 [I,C]; G03C0001-795 [I,A]; G03C0001-795 [I,C]
	NCL	430/533.000; 430/567.000; 430/569.000
JP 05005967	IPCI	G03C0001-015 [ICM,5]; G03C0001-035 [ICS,5]; G03C0001-795 [ICS,5]; G03C0003-00 [ICA,5]

AB A Ag halide **photog**. material, which is made to have a small  
 format and reduced in fog or white drop-out, comprises  $\geq 1$  layer  
 containing a Ag halide emulsion on a support, wherein  $\geq 1$  layer containing  
 the Ag halide emulsion contains a Ag halide emulsion having at least  
 partially Ag halide grains formed by the fine grains feeding method and  
 the support is made from a substance selected from the group consisting of  
 cellulose esters, polyamides, polycarbonates, polyesters, polystyrene,  
 polyethylene, and polypropylene and has a thickness of 25-120  $\mu\text{m}$ .

ST silver halide **photog** material support; fine grain feeding method  
**photog**; polyester support **photog** film  
IT **Photographic** emulsions  
(containing silver halide grains prepared by fine grain feeding method)  
IT Polyesters, uses  
RL: USES (Uses)  
(supports, for silver halide **photog.** materials)  
IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9003-53-6,  
Polystyrene 24936-69-4, Poly(1,4-cyclohexanedimethyleneterephthalate)  
**24936-76-3**, Poly(ethylene-1,2-diphenoxyethane-4,4'-dicarboxylate)  
24980-45-8 25037-99-4 25038-59-9, Poly(ethylene terephthalate), uses  
RL: USES (Uses)  
(supports, for silver halide **photog.** materials)

L9 ANSWER 59 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1992:436596 CAPLUS

DN 117:36596

ED Entered STN: 26 Jul 1992

TI Positive **photosensitive** resin composition

IN Banba, Toshio; Takeuchi, Etsu; Takeda, Toshiro; Takeda, Naoshige; Tokoh,  
Akira

PA Sumitomo Bakelite Co., Ltd., Japan

SO Eur. Pat. Appl., 26 pp.

CODEN: EPXXDW

DT Patent

LA English

IC ICM G03F007-023

ICS G03F007-004

CC 74-4 (Radiation Chemistry, Photochemistry, and Photographic and Other  
Reprographic Processes)

Section cross-reference(s): 25, 35, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	EP 459395	A2	19911204	EP 1991-108689	19910528
	EP 459395	A3	19920708		
	EP 459395	B1	19990818		
	R: DE, FR, GB, IT, NL				
	JP 04031860	A2	19920204	JP 1990-137111	19900529
	JP 2828736	B2	19981125		
	JP 04031861	A2	19920204	JP 1990-137112	19900529
	JP 2877894	B2	19990405		
	JP 04031862	A2	19920204	JP 1990-137113	19900529
	JP 2877895	B2	19990405		
	JP 04046345	A2	19920217	JP 1990-154049	19900614
	JP 2828740	B2	19981125		
	JP 04070659	A2	19920305	JP 1990-177376	19900706
	JP 08007436	B4	19960129		
	JP 04258958	A2	19920914	JP 1991-104053	19910213
	JP 2698228	B2	19980119		
	KR 183990	B1	19990401	KR 1991-8819	19910529
	US 5449584	A	19950912	US 1994-210417	19940318
PRAI	JP 1990-137111	A	19900529		
	JP 1990-137112	A	19900529		
	JP 1990-137113	A	19900529		
	JP 1990-154049	A	19900614		
	JP 1990-177376	A	19900706		
	JP 1991-104053	A	19910213		
	US 1991-705992	B1	19910528		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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EP 459395	ICM	G03F007-023
	ICS	G03F007-004
	IPCI	G03F0007-023 [ICM,5]; G03F0007-004 [ICS,5]
	ECLA	G03F007/004D; G03F007/004F; G03F007/022M; G03F007/023P; G03F007/039; G03F007/075M
JP 04031860	IPCI	G03F0007-023 [ICM,5]; G03F0007-075 [ICS,5]; H01L0021-027 [ICS,5]

JP 04031861 IPCI G03F0007-023 [ICM,5]; G03F0007-075 [ICS,5];  
H01L0021-027 [ICS,5]  
JP 04031862 IPCI G03F0007-023 [ICM,5]; C08G0073-22 [ICS,5]; G03F0007-075  
[ICS,5]; H01L0021-027 [ICS,5]  
JP 04046345 IPCI G03F0007-075 [ICM,5]; C08K0005-23 [ICS,5]; C08L0079-04  
[ICS,5]; C08L0079-06 [ICS,5]; C08L0079-08 [ICS,5];  
C08L0081-00 [ICS,5]; G03F0007-022 [ICS,5]; G03F0007-039  
[ICS,5]; G03F0007-075 [ICS,5]; H01L0021-027 [ICS,5]  
JP 04070659 IPCI G03F0007-022 [ICM,5]; H01L0021-027 [ICS,5]  
JP 04258958 IPCI G03F0007-32 [ICM,5]; H01L0021-027 [ICS,5]  
KR 183990 IPCI G03F0007-04 [ICM,7]  
US 5449584 IPCI G03F0007-023 [ICM,6]  
IPCR G03F0007-004 [I,A]; G03F0007-004 [I,C]; G03F0007-022  
[I,A]; G03F0007-022 [I,C]; G03F0007-023 [I,A];  
G03F0007-023 [I,C]; G03F0007-039 [I,A]; G03F0007-039  
[I,C]; G03F0007-075 [I,A]; G03F0007-075 [I,C]  
NCL 430/190.000; 430/165.000; 430/192.000; 430/193.000;  
430/270.100; 430/906.000  
ECLA G03F007/004D; G03F007/004F; G03F007/022M; G03F007/023P;  
G03F007/039; G03F007/075M  
OS MARPAT 117:36596  
AB The title composition comprises a polybenzoxazole precursor (D) 100,  $\geq 1$   
organic solvent-soluble polymer having an aromatic and/or a heterocyclic residue  
(E) 2-200, and a **photosensitive** agent consisting of a  
diazoquinone compound and/or a dihydropyridine compound 10-100 parts. The  
precursor D has a polymerization degree of 2-500 and is obtained by polymerization of  
(a) a monomer having a group -COAr1CO- [Ar1 = a divalent aromatic or  
heterocyclic group], (b) a monomer having a group -NHA2(OH)2NH- [Ar1 = a  
tetraivalent aromatic or heterocyclic group], and (c) a monomer having a group  
-NHA3NH- [Ar3 = a divalent aromatic, heterocyclic, alicyclic, Si-containing  
aliphatic group] in such a proportion that  $a/(b + c) = 0.9-1.1$  where  $b =$   
2-100,  $c = 0-98$ , and  $b + c = 100$  mol%. The polymer E is selected from  
polyimides, polybenzimidazoles, polybezothiazoles, etc. The  
**photosensitive** composition has excellent alkali resistance when  
unexposed to light and accordingly can give a high residual film ratio.  
ST **photosensitive** compn polybenzoxazole precursor; diazoquinone  
compd **photosensitive** compn; polyimide **photosensitive**  
compn; semiconductor device **photosensitive** compn  
IT **Photoimaging** compositions and processes  
(alkali-resistant)  
IT Semiconductor devices  
(**photosensitive** compns. for manufacture of)  
IT Siloxanes and Silicones, uses  
RL: USES (Uses)  
(polyamic acid-, for **photosensitive** compns.)  
IT Polyamic acids  
RL: USES (Uses)  
(siloxane-, for **photosensitive** compns.)  
IT 9010-39-3 21829-25-4 21829-26-5 25280-53-9, Polyhydantoin  
26875-71-8 26985-65-9 31346-56-2 38595-90-3 51289-96-4,  
Polyoxadiazole 53055-12-2 64427-99-2 **112480-82-7**  
128611-69-8 133440-72-9 141922-02-3 141922-03-4 141922-04-5  
141922-05-6 141948-93-8 142175-42-6 142358-42-7  
RL: USES (Uses)  
(**photosensitive** compns. containing)  
IT 30679-44-8P 96280-60-3P 116325-73-6P 141948-92-7P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and use of, in **photosensitive** composition)  
IT 142105-09-7P 142175-41-5P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and use of, in **photosensitive** compns.)  
L9 ANSWER 60 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1992:130314 CAPLUS  
DN 116:130314  
ED Entered STN: 03 Apr 1992  
TI Molecular composites comprising rodlike polyamides and vinyl polymers  
AU Stein, R. S.; Sethumadhavan, M.; Gaudiana, R. A.; Adams, T.; Guarrera, D.;  
Roy, S. K.

CS Polym. Res. Inst., Univ. Massachusetts, Amherst, MA, 01003, USA  
SO Journal of Macromolecular Science, Pure and Applied Chemistry (1992),  
A29(7), 517-31  
CODEN: JSPCE6; ISSN: 1060-1325

DT Journal  
LA English  
CC 37-5 (Plastics Manufacture and Processing)

AB Semi-interpenetrating networks of fluoropolymer-polyamides with either  
poly(4-vinylpyridine), poly(N-vinylpyridinone), or poly(vinyl Me ketone)  
are characterized via spectroscopy and various scattering techniques;  
mech. and optical properties are also examined The composites are made by  
either **photopolymn.** of a homogeneous solution of a rodlike polymer  
in a monomer containing a **photoinitiator**, or by solvent evaporation from  
homogeneous solns. of very limited combinations of solvent, rodlike  
polymers, and flexible polymers. While both of these techniques produce  
optically clear, nonscattering films of various thicknesses over the  
entire composition range (1-99 wt% of rodlike polymer), the latter is generally  
more convenient.

ST fluoropolymer polyamide semi interpenetrating network; polyvinylpyridine  
fluoropolyamide semiinterpenetrating network; polyvinylpyrrolidinone  
fluorinated nylon semiinterpenetrating network; polyvinyl methyl ketone  
semiinterpenetrating network

IT Glass temperature and transition  
(of fluoropolymer-polyamide-(poly(phenylene vinylene))  
semiinterpenetrating networks with either poly(vinylpyridine) or  
poly(vinylpyrrolidinone) or poly(vinyl Me ketone))

IT Chains, chemical  
(semiinterpenetrating networks of, of fluoropolymer-polyamide-  
(poly(phenylene vinylene)s) with either poly(vinylpyridine) or  
poly(vinylpyrrolidinone) or poly(vinyl Me ketone))

IT Polyamides, properties  
RL: PRP (Properties)  
(fluorine-containing, semiinterpenetrating networks with either  
poly(vinylpyridine) or poly(vinylpyrrolidinone) or poly(vinyl Me  
ketone), thermal and mech. properties of)

IT Fluoropolymers  
RL: PRP (Properties)  
(polyamide-, semiinterpenetrating networks with either  
poly(vinylpyridine) or poly(vinylpyrrolidinone) or poly(vinyl Me  
ketone), thermal and mech. properties of)

IT 9003-39-8 25038-87-3, Poly(vinyl methyl ketone) 25232-41-1,  
Poly(4-vinylpyridine)  
RL: PRP (Properties)  
(semiinterpenetrating networks with aromatic fluoropolymer-polyamides,  
thermal and mech. properties of)

IT 86536-38-1 **99742-79-7** 99754-99-1 139427-15-9  
RL: PRP (Properties)  
(semiinterpenetrating networks with either poly(vinylpyridine) or  
poly(vinylpyrrolidinone) or poly(vinyl Me ketone), thermal and mech.  
properties of)

L9 ANSWER 61 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1992:130211 CAPLUS  
DN 116:130211  
ED Entered STN: 03 Apr 1992  
TI Molecular composites comprising rodlike and flexible polymers. 1  
AU Gaudiana, R. A.; Adams, T.; Stein, R. S.  
CS Mater. Res. Lab., Polaroid Corp., Cambridge, MA, 02139, USA  
SO Macromolecules (1992), 25(6), 1842-3  
CODEN: MAMOBX; ISSN: 0024-9297

DT Journal  
LA English  
CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 35

AB Mol. composites were made by two methods: 1) the in-situ or kinetic method  
in which a rodlike polymer and a **photoinitiator** are dissolved in  
a vinyl monomer followed by **photochem.** polymerization of the latter; 2)  
evaporation of solvent from a homogeneous solution of a rodlike and a flexible  
polymer. In certain rodlike bis(trifluoromethyl)biphenylene

group-containing polyamides, mol. level dispersion over the entire compositional range was obtained, but for similar poly(ester amides) and polyesters the limiting concentration was .apprx.35%.

ST mol composite flexible rodlike polymer; vinyl polymer mol composite; polyamide mol composite

IT Chains, chemical  
(flexible, mol. composites, with polymers containing rodlike chains)

IT Polyamides, preparation  
Polyesters, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(fluorine-containing, biphenylene group-containing, mol. composites with vinyl polymers, preparation of)

IT Polymerization  
(**photochem.**, in preparation of rodlike-flexible polymer mol. composites)

IT Fluoropolymers  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-, biphenylene group-containing, mol. composites with vinyl polymers, preparation of)

IT Polyesters, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-, fluorine- and biphenylene group-containing, mol. composites with vinyl polymers, preparation of)

IT Fluoropolymers  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyamide-polyester-, biphenylene group-containing, mol. composites with vinyl polymers, preparation of)

IT Fluoropolymers  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyester-, biphenylene group-containing, mol. composites with vinyl polymers, preparation of)

IT Polyamides, preparation  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(polyester-, fluorine- and biphenylene group-containing, mol. composites with vinyl polymers, preparation of)

IT Chains, chemical  
(rodlike, mol. composites, with polymers containing flexible chains)

IT 9003-39-8P, Poly(N-vinylpyrrolidinone) 9003-53-6P, Polystyrene  
25038-87-3P, Poly(methyl vinyl ketone) 25232-41-1P, Poly(4-vinylpyridine)  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(mol. composites with bis(trifluoromethyl)biphenylene group-containing polymers, preparation of)

IT 86536-38-1P **99742-79-7P** 99754-99-1P 109977-35-7P  
132100-54-0P 139427-15-9P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(mol. composites with vinyl polymers, preparation of)

L9 ANSWER 62 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1992:130040 CAPLUS  
DN 116:130040  
ED Entered STN: 03 Apr 1992  
TI Valence band x-ray **photoelectron** spectroscopy of poly(ether ketone) and poly(ether ether ketone)  
AU Cain, Stephen R.; Matienzo, Luis J.  
CS Syst. Technol. Div., IBM, Endicott, NY, 13760, USA  
SO Journal of Polymer Science, Part B: Polymer Physics (1992), 30(3), 275-9  
CODEN: JPBPEM; ISSN: 0887-6266  
DT Journal  
LA English  
CC 36-2 (Physical Properties of Synthetic High Polymers)  
AB Poly(ether ketone) and PEEK are characterized by valence-band XPS. The valence-band region appears to be resolved into 6 regions. Peak assignments are made by comparing the observed spectra with simulations from extended Hueckel-type band calcns. Results of the band calcns. agree fairly well with the exptl. data.  
ST polyether polyketone valence band XPS  
IT Simulation and Modeling, physicochemical  
(of electronic structure, of polyether-polyketones, XPS spectra in

relation to)  
 IT Polyketones  
 RL: PRP (Properties)  
 (polyether-, aromatic, valence-band XPS of, exptl. and theor. study of)  
 IT Polyethers, properties  
 RL: PRP (Properties)  
 (polyketone-, aromatic, valence-band XPS of, exptl. and theor. study of)  
 IT Energy level, band structure  
 (valence, of polyether-polyketones, XPS spectra in relation to)  
 IT 27380-27-4, PEK 31694-16-3, PEEK  
 RL: PRP (Properties)  
 (valence-band XPS of, exptl. and theor. study of)

L9 ANSWER 63 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1991:33082 CAPLUS

DN 114:33082

ED Entered STN: 26 Jan 1991

TI Electrophotographic **photoreceptor** and image formation using the  
**photoreceptor**

IN Akasaki, Yutaka; Aonuma, Hidekazu; Hongo, Kazuya; Sato, Katsuhiko; Nukada,  
 Katsumi; Marumo, Akio

PA Fuji Xerox Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 10 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03G005-05

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

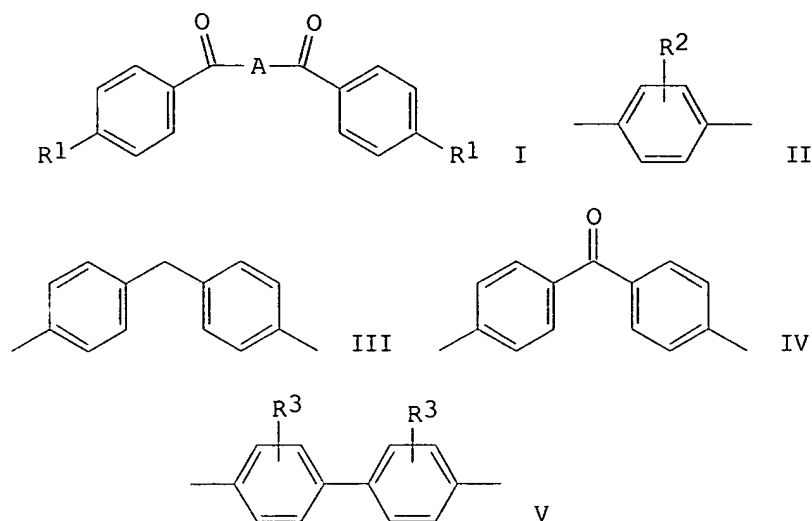
FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02097958	A2	19900410	JP 1988-249740	19881005
	US 5006435	A	19910409	US 1989-416778	19891004
	US 5091276	A	19920225	US 1990-625196	19901210
PRAI	JP 1988-249736	A	19881005		
	JP 1988-249737	A	19881005		
	JP 1988-249740	A	19881005		
	JP 1988-249741	A	19881005		
	US 1989-416778	A3	19891004		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 02097958	ICM	G03G005-05
	IPCI	G03G0005-05 [ICM,5]
US 5006435	IPCI	G03G0005-047 [ICM,5]; G03G0005-09 [ICS,5]
	IPCR	G03G0005-06 [I,A]; G03G0005-06 [I,C]
	NCL	430/058.350; 430/058.050; 430/058.250; 430/058.650; 430/083.000
US 5091276	IPCI	G03G0013-01 [ICM,5]; G03G0013-22 [ICS,5]
	IPCR	G03G0005-06 [I,A]; G03G0005-06 [I,C]
	NCL	430/045.000; 430/100.000; 430/126.000

GI



AB In the title electrophotog. **photoreceptor**, a charge-generating layer contains a pos. hole-transporting charge-generating pigment and a ketone I [A = II, III, IV, V; R<sub>1</sub> = H, nitro, alkyl, alkoxy, carbonyl, halogen, aryl, aryloxy, cyano; R<sub>2</sub> = H, alkyl; R<sub>3</sub> = H, nitro, alkyl]. The image formation comprises formation of an electrostatic latent image by exposing with light after a neg. charge is charged uniformly on the surface of the **photoreceptor**, formation of a toner image by contacting a neg. charged toner with the low-potential parts of the electrostatic image, placing a receptor sheet on the **photoreceptor**, and transfer of the toner image onto the receptor sheet by applying a pos. charge from the backside of the receptor sheet. Images without fog can be obtained.

ST ketone electrophotog **photoreceptor**  
 IT Electrophotographic **photoconductors**  
 (charge-generating layers containing ketones for)  
 IT Electrophotographic development  
 (of **photoreceptors** with charge-generating layers containing ketones)  
 IT 3016-97-5 20788-35-6 22198-42-1 31892-60-1 31948-16-0 33090-29-8  
 129987-56-0 129987-57-1 130769-19-6 130769-21-0 **131268-47-8**  
**131268-48-9** 131268-49-0 131268-50-3 131268-51-4  
 131268-52-5  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (charge-generating layer containing, for electrophotog. **photoreceptor**)  
 IT 80213-68-9P  
 RL: PREP (Preparation)  
 (preparation of, for charge-generating layers for electrophotog. **photoreceptors**)  
 IT 101-81-5, Diphenylmethane 122-04-3, p-Nitrobenzoylchloride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, ketone derivative from, for electrophotog. **photoreceptor**)

L9 ANSWER 64 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1990:641493 CAPLUS  
 DN 113:241493  
 ED Entered STN: 22 Dec 1990  
 TI Electrophotographic **photoreceptors** using benzoyl derivative as charge-transporting agent  
 IN Akasaki, Yutaka; Nukada, Katsumi; Sato, Katsuhiko  
 PA Fuji Xerox Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM G03G005-06

ICS C09K009-02  
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)  
 Section cross-reference(s): 25

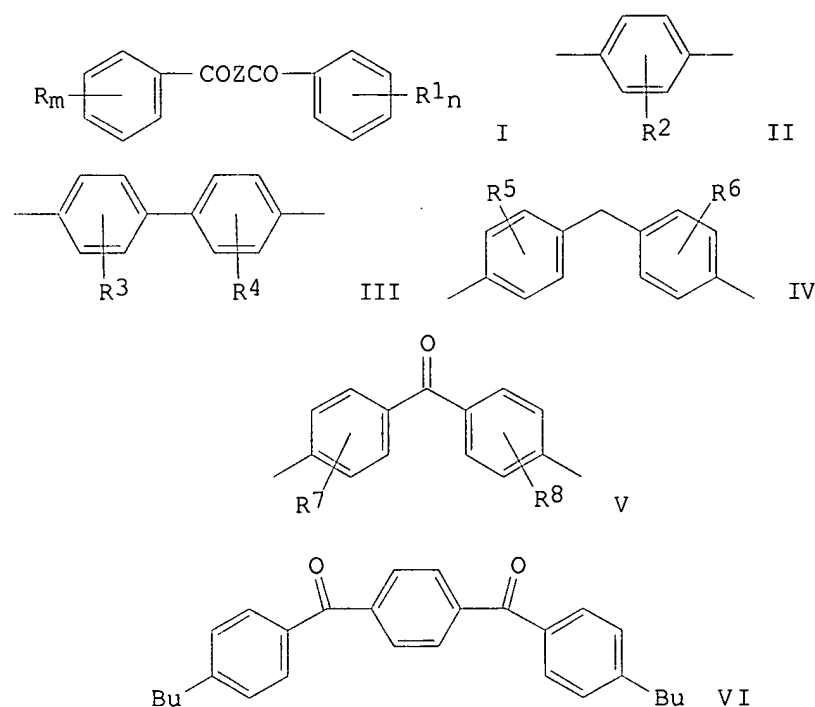
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 02135360	A2	19900524	JP 1988-287615	19881116
	US 5028505	A	19910702	US 1989-436617	19891115
PRAI	JP 1988-287615	A	19881116		
	JP 1988-287616	A	19881116		
	JP 1988-287619	A	19881116		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 02135360	ICM	G03G005-06
	ICS	C09K009-02
	IPCI	G03G0005-06 [ICM,5]; C09K0009-02 [ICS,5]
US 5028505	IPCI	G03G0005-14 [ICM,5]
	IPCR	G03G0005-06 [I,A]; G03G0005-06 [I,C]
	NCL	430/058.250; 430/058.350; 430/095.000

GI



AB The title **photoreceptors** comprise a conductive support with a coating of a **photosensitive** layer containing a benzoyl derivative I [R, R<sub>1</sub> =H, alkyl, aryl, alkoxy carbonyl, aryloxy carbonyl, alkyl carbonyl, aryl carbonyl, NO<sub>2</sub>, halo, CN; Z = II, III, IV, V (R<sub>2</sub>-8 =H, alkyl, NO<sub>2</sub>, halo, CN) m, n = 0-3] as charge-transporting agent. A pos.-working **photoreceptor** using trigonal Se, polyvinylcabazole and VI showed good electrophotog. properties.

ST electrophotog **photoreceptor** charge transporting agent; benzoyl deriv electrophotog **photoreceptor**

IT Electrophotographic **photoconductors**  
 (using benzoyl derivative as charge-transporting agent, for good pos.-charging properties)

IT 20788-36-7 102184-57-6 123716-34-7 130769-19-6 **130769-20-9**  
 130769-21-0



RL: USES (Uses)  
(charge-transporting agent, electrophotog. **photoreceptor** using)

IT 41725-30-8  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(chlorination of)

IT 80213-68-9P 129987-56-0P 129987-57-1P  
RL: PREP (Preparation)  
(preparation of, charge-transporting agent, electrophotog. **photoreceptor** using)

IT 100-20-9, 1,4-Benzenedicarbonyl dichloride 101-81-5, Diphenylmethane  
104-51-8, n-Butylbenzene 122-04-3, p-Nitrobenzoyl chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of)

L9 ANSWER 65 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1989:584010 CAPLUS  
DN 111:184010  
ED Entered STN: 10 Nov 1989  
TI New high temperature stable positive **photoresists** based on hydroxy polyimides and polyamides containing the hexafluoroisopropylidene (6-F) linking group  
AU Khanna, D. N.; Mueller, W. H.  
CS SCG-Res. Dev., Hoechst Celanese Corp., Coventry, RI, 02816, USA  
SO Polymer Engineering and Science (1989), 29(14), 954-9  
CODEN: PYESAZ; ISSN: 0032-3888  
DT Journal  
LA English  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB Synthesis, characterization, and lithog. evaluations of novel pos. **photoresists** based on hydroxy polyimides and polyamides containing 6-F linking groups are described. The polymers were synthesized using solution condensation techniques. Tg's of these polymers range from 250 to 300°. Both polyimides and polyamides are soluble in a variety of solvents commonly utilized for **photoresist** applications. When formulated with diazonaphthoquinone sensitizers, these polymers provide an improved high-temperature resistant, aqueous base-developable pos. **photoresist** system with good **photospeed**, contrast, and resolution characteristics. High resolution relief images were obtained which are comparable to 1300 Series AZ type **photoresists**. No thermal deformation, loss in resolution or defects were noticed when relief patterns were annealed to 250°. Addnl., the hydroxy polyamide based resists, when thermally annealed to 300°, provide a **photoresist** system with even higher thermal stability (400-450°) and excellent resistance to solvents. Also, the **photoresist** formulations have excellent storage stability at room temperature and can be processed like conventional pos. **photoresists** using broad band UV radiation sources.

ST pos **photoresist** hydroxy polyimide polyamide;  
fluoroisopropylidene hydroxy polyimide **photoresist**

IT Resists  
(**photo**-, pos.-working, hydroxy polyimides and polyamides containing hexafluoroisopropylidene linking group for, high temperature-stable)

IT 112480-82-7P 112492-60-1P 112492-61-2P 113339-21-2P  
113716-09-9P 113716-10-2P 113742-47-5P 113742-48-6P 121333-85-5P  
121333-86-6P 121333-87-7P 121334-09-6P 121334-10-9P 121334-11-0P  
123209-86-9P 123349-55-3P 123349-56-4P 123349-57-5P  
RL: PREP (Preparation)  
(preparation of, for high temperature-stable pos. **photoresist**)

L9 ANSWER 66 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
AN 1985:47198 CAPLUS  
DN 102:47198  
ED Entered STN: 09 Feb 1985  
TI Thermal and fiber properties of brominated polyether-esters  
AU Inoue, Toshihide; Komatsu, Hideo; Yanagi, Masana  
CS Plast. Lab., Toray Ind., Nagoya, 455-91, Japan  
SO Kobunshi Ronbunshu (1984), 41(11), 685-9

CODEN: KBRBA3; ISSN: 0386-2186

DT Journal  
 LA Japanese  
 CC 40-2 (Textiles)  
 Section cross-reference(s): 36

AB The thermal properties of self-extinguishing poly[alkylene 1,2-bis(2-bromophenoxy)ethane-4,4'-dicarboxylates] were studied. The glass transition temps. of the polyether-esters are higher than those of the corresponding poly[alkylene 1,2-bis(phenoxy)ethane-4,4'-dicarboxylates] because of the chain stiffness due to bromo substitution. However, the melting temps. are almost the same because of the lower crystallinity due to bromo substitution. Poly[ethylene 1,2-bis(2-bromophenoxy)ethane-4,4'-dicarboxylate] [53467-83-7] fibers could be melt-spun at 280° without thermal decomposition. The fibers showed a high initial modulus (158 g/denier) and had excellent UV stability.

ST polyether polyester bromo property; fiber bromo polyether polyester; self extinguishing fiber; flame retardant fiber; bromocarboxyphenyl ether polyester fiber; glycol bromocarboxyphenyl ether polyester; polyalkylene bisbromophenoxyethanedicarboxylate; thermal property polyether polyester

IT Glass temperature and transition  
 Heat of fusion and Heat of freezing  
 Melting point  
 (of poly[alkylene bis(bromophenoxy)ethanedicarboxylates] and bromine-free analogs)

IT Mechanical loss  
 (of poly[ethylene bis(bromophenoxy)ethanedicarboxylate] and its bromine-free analog)

IT Fire-resistant materials  
 (poly[alkylene bis(bromophenoxy)alkanedicarboxylates], thermal properties of)

IT Polyesters, properties  
 (alkanediol-bis[(bromo)carboxyphenoxy]alkane, thermal and mech. properties of)

IT Synthetic fibers  
 RL: USES (Uses)  
 (di-Me bis[(bromo)carboxyphenoxy]ethane-ethylene glycol polymers, mech. properties and light stability of)

IT Polymer degradation  
 (photochem., of poly[ethylene bis(bromophenoxy)ethanedicarboxylate] and its bromine-free analog)

IT Polyethers  
 RL: PRP (Properties)  
 (polyester-, bromine-containing, thermal and fiber properties of)

IT Polyesters, properties  
 RL: PRP (Properties)  
 (polyether-, bromine-containing, thermal and fiber properties of)

IT 29415-97-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (etherification of, by dibromoethane)

IT 24936-76-3 26373-72-8 53467-83-7 69488-56-8  
 RL: USES (Uses)  
 (mech. and thermal and fiber properties of)

IT 53223-67-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)

IT 25735-85-7 52826-06-9 52826-19-4 94352-20-2 94352-21-3  
 94352-22-4 94352-23-5 94352-24-6 94352-25-7 94352-26-8  
 94352-27-9 94352-86-0 94352-87-1 94352-88-2 94352-89-3  
 94352-90-6 94352-91-7 94352-92-8  
 RL: PRP (Properties)  
 (thermal properties of)

L9 ANSWER 67 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN  
 AN 1984:200930 CAPLUS  
 DN 100:200930  
 ED Entered STN: 08 Jun 1984  
 TI **Photoconductive** compositions  
 IN Perlstein, Jerome H.; Reynolds, George A.; Vanallan, James A.; Clark,

Suzanne P.  
 PA Eastman Kodak Co., USA  
 SO U.S., 12 pp. Cont.-in-part of U.S. Ser. No. 874,971, abandoned.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC G03G005-06; G03G005-14  
 INCL 430075000  
 CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other  
 Reprographic Processes)

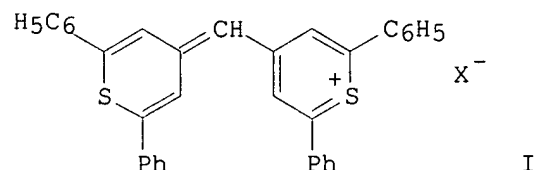
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4429030	A	19840131	US 1982-435524	19821020
	CA 1129426	A1	19820810	CA 1978-313939	19781023
	JP 54083837	A2	19790704	JP 1978-146151	19781128
	JP 62048214	B4	19871013		
PRAI	US 1977-855141	A2	19771128		
	US 1978-874971	A2	19780203		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 4429030	IC	G03G005-06; G03G005-14
	INCL	430075000
	IPCI	G03G0005-06; G03G0005-14
	IPCR	G03G0005-04 [I,C]; G03G0005-06 [I,A]; G03G0005-06 [I,C]; G03G0005-09 [I,A]
	NCL	430/075.000; 430/058.750; 430/083.000
CA 1129426	IPCI	C07D0345-00; G03C0001-16
JP 54083837	IPCI	G03G0005-04; H01L0031-08

GI



AB An electrophotog. **photoreceptor** exhibiting high speed and contrast is prepared by subjecting a **photoconductive** coating containing an insulating polymer binder, an organic **photoconductor**, and a thiopyrylium dye I (X<sup>-</sup> = an anion) to solvent vapors to cause a spectral change due to dye-dye complex formation (the same change in absorption spectrum is observed when a binderless film of I is treated with the solvent vapors). Thus, an unsubbed Ni-coated poly(ethylene terephthalate) support was coated with a composition prepared by stirring for 5 min and heating at 50° a solution containing 4-[(2,6-diphenyl-4H-thiopyran-4-ylidene)methyl]-2,6-diphenylthiopyrylium perchlorate 12.8, CH<sub>2</sub>Cl<sub>2</sub> 1, hexafluoroisopropanol 0.1, and a CH<sub>2</sub>Cl<sub>2</sub> solution of Lexan 145 (0.1 g/mL) 5 mL and then mixing with tri-p-tolylamine 327 g. The film was dried at 60° for 1 h to give a dry thickness of 6μ, then treated with CH<sub>2</sub>Cl<sub>2</sub> vapor for 1 min, and dried 1 h at 60°. The film was neg. charged to attain an initial dark surface potential of .apprx.500 V and exposed with 640 nm light. The **photosensitivity** (equivalent to the exposure necessary to discharge the element from -500 to -100 V) was 8 erg/cm<sup>2</sup> vs. 189 erg/cm<sup>2</sup> for a control not treated with CH<sub>2</sub>Cl<sub>2</sub> vapor.

ST electrophotog **photoconductor** thiopyrylium dye; solvent treatment  
 electrophotog thiopyrylium **photoreceptor**; dye complex  
 electrophotog **photoconductor**

IT **Photography, electro-, photoconductors**  
**Photography, electro-, plates**  
 (composite, containing thiopyrylium dye, treatment of, with solvent vapors, for increased speed and **photosensitivity**)

IT 1159-53-1 15008-36-3

RL: USES (Uses)  
 (electrophotog. **photoconductive** coating containing thiopyrylium dye and, solvent vapor treatment of, for increased **photosensitivity** and speed)

IT 75-09-2, uses and miscellaneous  
 RL: USES (Uses)  
 (electrophotog. **photoconductive** composition containing thiopyrylium dye and treated with vapor of, for increased speed and **photosensitivity**)

IT 9003-53-6 24936-68-3, uses and miscellaneous 24979-94-0 26023-23-4 26063-49-0 26140-06-7 **31760-40-4**  
 RL: USES (Uses)  
 (electrophotog. **photoconductive** composition containing thiopyrylium dye and, solvent vapor treatment of, for increased speed and **photosensitivity**)

IT 89900-17-4  
 RL: USES (Uses)  
 (electrophotog. **photoconductor** composition containing, solvent vapor treatment of, for increased speed and **photosensitivity**)

IT 13586-34-0 69281-56-7  
 RL: USES (Uses)  
 (electrophotog. **photoconductor** composition containing, treatment of, with solvent vapor, for increased **photosensitivity** and speed)

L9 ANSWER 68 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1981:93593 CAPLUS

DN 94:93593

ED Entered STN: 12 May 1984

TI Electrophotographic plates

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC G03G005-14; G03G005-08

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55100562	A2	19800731	JP 1979-6589	19790125
PRAI	JP 1979-6589	A	19790125		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 55100562	IC	G03G005-14; G03G005-08
	IPCI	G03G0005-14; G03G0005-08

AB An electrophotog. plate is composed of (1) a conductive support, (2) a layer of a polyether of the formula  $[C_6H_4ZC_6H_4O]_n$  ( $Z = SO_2, CO, SO$ ;  $n =$  pos. integer), and (3) a Se-base **photoconductor** layer. Thus, poly(diphenylsulfone ether) 100 parts was dissolved in a solvent mixture and coated on an Al support, and Se was vacuum deposited on the polymer layer to give an electrophotog. plate having excellent sensitivity and no residual charge build-up.

ST electrophotog selenium plate subbing layer; polyether subbing layer

IT **Photography**, electro-, plates

(selenium, subbing layers for, polyethers as)

IT 13494-80-9, uses and miscellaneous

RL: USES (Uses)

(electrophotog. **photoconductor** from selenium and, subbing layers for)

IT 25667-42-9 **27380-27-4** 31694-66-3

RL: USES (Uses)

(electrophotog. plate subbing layer from)

L9 ANSWER 69 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1981:55898 CAPLUS

DN 94:55898

ED Entered STN: 12 May 1984

TI Electrophotographic plates

PA Toray Industries, Inc., Japan  
SO Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC G03G005-08; G03G005-14  
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55096956	A2	19800723	JP 1979-3378	19790118
PRAI	JP 1979-3378	A	19790118		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 55096956	IC	G03G005-08; G03G005-14
	IPCI	G03G0005-08; G03G0005-14

AB Electrophotog. Se (or its alloy) **photoconductor** layers are overcoated with a polyether having structural repeating units of general formula -C6H4ZC6H4O- (Z = SO2, SO, CO). Thus, an electrophotog. film having a Se **photoconductor** layer was coated with a poly(diphenylsulfone ether) (Victorex 200 P from ICI Co.) to give an electrophotog. film with improved durability.

ST electrophotog selenium plate protective coating

IT **Photography**, electro-, plates

(protective coatings for selenium, polyethers as)

IT 25667-42-9 **27380-27-4** 31694-66-3

RL: USES (Uses)

(coating, protective, for electrophotog. selenium plates)

L9 ANSWER 70 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1980:102297 CAPLUS

DN 92:102297

ED Entered STN: 12 May 1984

TI Electrophotographic elements forming a **photoconductive** layer on a conducting support

IN Perlstein, Jerome Howard; Reynolds, George Arthur; VanAllan, James Albert; Clark, Suzanne Patricia

PA Eastman Kodak Co., USA

SO Eur. Pat. Appl., 27 pp.

CODEN: EPXXDW

DT Patent

LA English

IC G03G005-09; G03G005-06

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 2238	A1	19790613	EP 1978-101449	19781124
	EP 2238	B1	19840613		

R: BE, DE, FR, GB

CA	1129426	A1	19820810	CA 1978-313939	19781023
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JP	54083837	A2	19790704	JP 1978-146151	19781128
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JP	62048214	B4	19871013		
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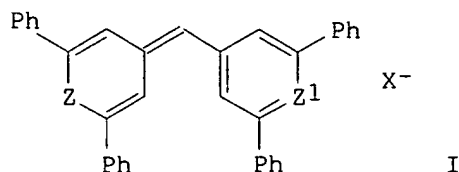
PRAI	US 1977-855141		19771128		
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	US 1978-874971		19780203		
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CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 2238	IC	G03G005-09; G03G005-06
	IPCI	G03G0005-09; G03G0005-06
CA 1129426	IPCI	C07D0345-00; G03C0001-16
JP 54083837	IPCI	G03G0005-04; H01L0031-08

GI



AB Electrophotog. materials are comprised of a conducting support coated with a **photoconductive** layer comprised of an elec. insulating binder, a dye, and, optionally, an organic **photoconductor**. The dye is in a dye-dye interaction condition which results from contacting the layer with vapors of a solvent for the dye after the layer is formed. The dye has the general formula I (Z, Z1 = O, Se, S; X<sup>-</sup>=anion). The use of the dye in the dye-dye interaction condition greatly improves the **photosensitivity** of the electrophotog. materials. Thus, 4-[(2,6-diphenyl-4H-thiopyran-4-ylidene)methyl]-2,6-diphenylthiopyrylium perchlorate 12.8 mg was dissolved in a mixture of CH<sub>2</sub>Cl<sub>2</sub> 1, 1,1,1,3,3,3-hexafluoroisopropanol 0.1, and CH<sub>2</sub>Cl<sub>2</sub> containing Lexan 145 (0.1 g/mL) 5mL. Tri-p-tolylamine 327 mg was added to the solution, coated on a Ni-coated poly(ethylene terephthalate) support, air-dried at 55°, fumed for 1 min with CH<sub>2</sub>Cl<sub>2</sub> vapor, and dried in a vacuum oven at 60° to give a blue electrophotog. film. The electrophotog. film was charged to a surface potential of -500 V and exposed to 640 nm light to reduce the surface potential from -500 V to -100 V with a **photosensitivity** of 8 erg/cm<sup>2</sup> vs. 189 erg/cm<sup>2</sup> for a control using an unfumed **photoconductive** layer.

ST electrophotog **photoconductor** fumed pyrylium dye

IT **Photography, electro-, photoconductors**

(containing solvent vapor-treated pyrylium salts for improved **photosensitivity**)

IT **Photography, electro-, sensitizers**

(pyrylium salts as, solvent vapor-treated)

IT 75-09-2, uses and miscellaneous

RL: USES (Uses)

(electrophotog. **photoconductor** compns. containing pyrylium salt treated with vapor of, with improved **photosensitivity**)

IT 1159-53-1 9003-53-6 24936-68-3, uses and miscellaneous 24979-94-0

25037-45-0 26007-09-0 26007-14-7 26023-23-4 26063-49-0

26140-06-7 26808-95-7 29057-88-3 **31760-40-4** 66218-60-8

RL: USES (Uses)

(electrophotog. **photoconductor** compns. containing solvent vapor-treated pyrylium salt and, with improved **photosensitivity**)

IT 13586-34-0 58943-46-7 69281-56-7 72861-79-1

RL: USES (Uses)

(electrophotog. **photoconductor** compns. containing solvent vapor-treated, with improved **photosensitivity**)

L9 ANSWER 71 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1979:95386 CAPLUS

DN 90:95386

ED Entered STN: 12 May 1984

TI **Photoconductive** compositions

AU Anon.

CS UK

SO Research Disclosure (1978), 176, 67-9 (No. 17641)

CODEN: RSDSBB; ISSN: 0374-4353

DT Journal; Patent

LA English

CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic Processes)

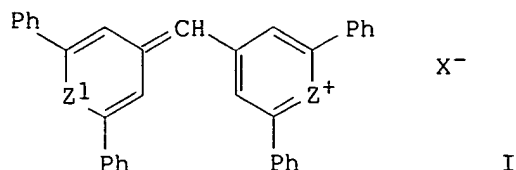
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RD 176041		19781210		

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PI RD 176041 19781210

PRAI RD 1978-176041 19781210

GI



AB **Photoconductive** compns. and elements are described which consist of a film-forming elec. insulating polymer and a dye which has an absorption spectrum which changes when a binderless coating of said dye is treated with a solvent. The dye has a structure according to the formula I (Z, Z' = O, Se, S; X- = anion). Thus, to a solution of 4-[(2,6-diphenyl-4H-thiopyran-4-ylidene)methyl]-2,6-diphenylselenopyrylium perchlorate 15.5 mg in CH<sub>2</sub>Cl<sub>2</sub> 2 and 1,1,1,3,3,3-hexafluoroisopropanol 0.2 mL were added a poly[4,4'-(2-norbornylidene)diphenylene carbonate] solution (0.075 g polymer/mL CH<sub>2</sub>Cl<sub>2</sub>) 5 mL and tri-p-tolylamine 297.8 mg. This solution was warmed, coated on a support, dried, vapor treated with PhMe, oven dried, and the **photosensitivity** (neg. charge, front exposure) determined to be 30 ergs/cm<sup>2</sup> vs. 498 ergs/cm<sup>2</sup> for an untreated control.

ST pyrylium dye **photoconductor** electrophotog

IT **Photography**, electro-, **photoconductors**

(pyrylium dye-polymer compns. as)

IT 25037-45-0 26007-09-0 26007-14-7 26808-95-7 66218-60-8  
69254-02-0

RL: USES (Uses)

(electrophotog. **photoconductive** compns. containing)

IT 1159-53-1

RL: USES (Uses)

(**photocond.** compns. containing pyrylium dye, polymeric binder, and, for electrophotog.)

IT 13586-34-0 41494-40-0 56347-56-9 65222-28-8 69281-56-7

RL: USES (Uses)

(**photoconductive** composition containing polymer binder and, for electrophotog.)

IT 9003-53-6 24936-68-3, uses and miscellaneous 24979-94-0 26023-23-4  
26063-49-0 26140-06-7 **31760-40-4**

RL: USES (Uses)

(**photoconductive** compns. containing pyrylium dyes and, for electrophotog.)

L9 ANSWER 72 OF 72 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1976:90848 CAPLUS

DN 84:90848

ED Entered STN: 12 May 1984

TI Polyesters having high glass transition temperatures

AU Sandhu, M. Akram

CS UK

SO Research Disclosure (1975), 140, 42 (No. 14016)

CODEN: RSDSBB; ISSN: 0374-4353

DT Journal; Patent

LA English

CC 36-3 (Plastics Manufacture and Processing)

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RD 140016		19751210		

PI RD 140016 19751210

PRAI RD 1975-140016 19751210

AB Poly(isopropylidenedi-p-phenylene 4,4'-sulfonyldibenzoate) (I) [**31587-75-4**] was prepared having glass transition temperature 268° and was formed into films useful as supports and overcoats for **photog.** products. 4,4'-Sulfonyldibenzoic acid (II) was converted to the chloride with SOCl<sub>2</sub>, and treated with 4,4'-isopropylidenediphenol (III) in CH<sub>2</sub>Cl<sub>2</sub> in presence of Et<sub>3</sub>N to give 98% I.

ST sulfonyldibenzoic acid isopropylidenediphenol copolymer; polysulfone polyester coating; bisphenol A polyester

IT Glass temperature and transition  
(of polyesters, prepared from isopropylidenediphenol and  
sulfonyldibenzoyl chloride)  
IT Polyesters, preparation  
RL: PREP (Preparation)  
(polysulfone-, with high glass transition temperature)  
IT 57947-60-1P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, having glass transition temperature)  
IT 30733-15-4P 31587-75-4P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, having high glass transition temperature)

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E US-2004259023/PN

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L2 1 S 789485-39-8/RN

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L4 2 S L2

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L5 62237 S BIS AND BENZOIC ACID

L6 268 S L5 AND PHENYLENECARBONYL

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L7 1 S 18908-95-7/RN

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L8 1 S L7

L9 72 S L6 AND PHOTO?

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